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OBSERVATIONS UPON NERVOUS MANIFESTATIONS IN THE RHEUMATISM OF CHILDHOOD.*

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GENTLEMEN,—I continue with this lecture the series I have been giving at the hospital upon acute rheumatism during the last ten years, and have now to consider the influence of the disease upon the nervous system. Without pretending to force upon you the explanation I have given throughout of the causations of this disease, I would ask you for the moment to accept it because I want to consider the nervous symptoms as direct results of the infection. Even if my conclusions should be wrong they will be of some interest because they are founded upon what appears to be a rational pathology, and they will enable you to see clearly the chief difficulties in the subject.

What I am asking you to accept for the time, then, is this—that the nervous symptoms in rheumatism are the result of either a local infection in the nervous centres, or of a general toxæmia. My personal inclination is to a local infection as the more important factor, because in other rheumatic lesions the tendency is to the pro-

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duction of local infections by the deposit of the micrococci. This, however, is a question which is at present open, but one which I emphasise now because I want to introduce here a short digression from the main subject of this lecture. We often hear mention made of the rheumatic poison and its specific antidote, salicylate of soda. Now, is there a rheumatic poison? It seems to me there are probably many rheumatic poisons, and I believe these bacterial poisons are so subtle in their nature that they vary with the tissue in which the local lesion occurs. If we could convert a living human brain, joint and heart into three culture media out of the body and inoculate them with the micrococcus and then analyse the poisons that were formed, I do not believe they would be identical. Bacterial poisons are extraordinarily complex, and clinical observation of the nervous symptoms in rheumatism leads me to believe that some of them are built into the very tissues, from which they can only be displaced by a process of time.

How else can we explain such a fact as this: that a child gets an attack of chorea and for a long time after its recovery remains nervous and excitable to a degree which was never in existence before the illness, except by the supposition that the metabolism of the nervous centres has been altered by some molecular combination with rheumatic poisons?

In course of time, if all goes well, the natural constitution, that is the usually healthy processes of the nerve-cells, gradually assert themselves again and displace the faulty element in their constitution. Some curiously subtle change apart from disease must take place even in the healthy human brain as it develops, for if there is one thing that is certain, it is that in adult life there is much less tendency to the development of chorea in an attack of rheumatism.

Now do we, I wonder, pay sufficient attention to the probability that the chemical products of bacterial activity are very dependent upon their media? Are we not still too much imbued by the notion that a bacterium is something which, if we could magnify it sufficiently, would have diphtheria, typhoid, rheumatism, etc, written on its back, when in reality whether or not it is such depends probably upon many factors, such as its own evolution, the condition of the patient's tissues, the atmospheric conditions and so on.

The bearing of such possibilities as these upon the stamping out of diseases, such, for example, as rheumatism and tuberculosis, are far reaching. It is thoughts of this kind, too, that disturb me when I read of stock vaccines. Take, for example, the rheumatic micrococcus. We have the original strain of twelve years of age but we

cannot do more than grow it. It is quite harmless. Is that, now, the cause of rheumatism? Have not years of life *in vitro* destroyed the essential properties, and have not its chemical reactions altered out of all knowledge? Could a vaccine obtained from this be of value? If not, how soon does such a stock vaccine cease to be of value? I dwell upon these points because they seem to me to have close bearing upon a problem which we must face in studying rheumatism. We find that the reactions of the various tissues to rheumatism are very different. So far as the connective tissues are concerned, and it is to these the micrococci are naturally carried by the blood-stream, we see much the same microscopic appearances, but the local effects of the bacterial toxins upon the noble tissues they support are widely different. In early life the synovial structures are often damaged but the damage is not severe; it is acute but not persistent. Compare this with a severe carditis and you realise this difference, and we must also realise how different the vital processes must be in an organ, such as the heart, which is in ceaseless movement. I have heard it said that if we could keep a heart at rest as we can a joint there would be another story. Possibly this is so, but who can prove it?

Why is the peritoneum so rarely affected in rheumatism but the pleura so frequently? Why is the pericardium so often acutely inflamed and the pia mater so rarely? Why does the micrococcus lose virulence almost immediately on agar-agar and preserve it much longer in fresh blood agar?

These are problems I imagine that are dependent in part upon the subtlety of the chemical reactions of these bacteria. They are, of course, not peculiar to the rheumatic organism. I can continue in the same vein with tuberculosis: thus, for example, why does this attack the joints and bones so often in the young and the valves and the pericardium so rarely? If I made use of that fact as a proof that the bacillus was not the cause of the disease you would laugh at me, but the same reasoning applied to rheumatism would, I fancy, be used as evidence against this micrococcus as a causal agent.

I fear you will think that I am detaining you with wild problems and questions of little practical value, but I am convinced that if you are prepared to accept that rheumatism is the result of an infection, you must also be ready to bring to the study of that infection, from whatever point of view, minds that are not hampered by those narrowing terms "specific bacterium" and "specific rheumatic poison." The disease we are studying is a specific one in the practical sense that it takes a very definite place in the diseases of childhood,

but what precisely constitutes that specificity we have yet to learn. There is little doubt that the only exciting agent is the diplococcus, but to imagine this micrococcus as an agent which possesses but one possibility—that of producing rheumatism under all circumstances, and of doing this by means of one poison constant under all conditions—appears to me far too crude a conception.

Now to return to the nervous symptoms.

These are numerous, but there are two phenomena which stand out as landmarks. One of these, chorea, is extremely common, the other, hyperpyrexia in childhood exceedingly rare. Both conditions Dr. Paine and I have had opportunities of studying with some completeness.

Chorea.

Some of you will be surprised, I expect, at the way in this country in which we look upon chorea as an evidence of rheumatism. Even here, however, there is some trepidation about it, and when a classical article is demanded, a neurologist is called upon to undertake the task. I do not imply that he is not entirely capable of such a task, but it is evidence that there still lingers the idea that chorea is a functional disease of the nervous system. Although it may appear that I am flogging a dead horse, I shall in this lecture bring forward some statistics of my own upon the relation of chorea and rheumatism, for they have been collected over eleven years and enable me to mention some useful facts; but let me add at once that I am not going to assert that all cases of chorea are rheumatic in origin. Such a statement would introduce some conclusions which we cannot be warranted in drawing. If all chorea is rheumatic, then there must be some peculiar poison in rheumatism which produces an effect upon the nervous system unlike any other, but, as I have already stated, we are ignorant of the nature of the rheumatic poisons, and so at once in stating this we make an assumption. If clinical investigation showed that no other cause but rheumatism could be traced in every case, that assumption might be legitimate, but this is not so, for we always find a certain number of examples of chorea which if attributed to rheumatism would demand another assumption on our part, for we cannot get sufficient data to justify the claim. There are, for example, as I have myself seen, some cases of tubercular meningitis in which a chorea occurs indistinguishable from the rheumatic form. There are a few cases in which a fright or shock, if we trust to logical reasoning, is apparently the exciting

cause. Until we can explain these as due to rheumatism by evidence which is incontrovertible we lose rather than gain by the rigid statement that all chorea is rheumatic, because the future may disprove this, and the complete explanation of the disease may be delayed by an error that we have insisted upon as a truth.

You no doubt have often been struck with the frequency of chorea in early life and its comparative rarity in the adult, and if you are attached as I am to a General and a Children's Hospital you will have noticed that it is during the time of puberty that the decrease in frequency is marked. I find a certain number of the cases that I transfer after twelve years of age to University College Hospital develop this condition before they have reached fifteen or sixteen, and these are far more numerous in proportion than the adults. The inference seems to be that after puberty the brain becomes more resistant. The number of entirely new impulses to which it must react are becoming fewer, and it is less busied with its own developmental processes and more able to guard against external dangers. The rheumatic poisons, too, are evidently more able to attack growing and developing tissues. There is even a change in the character of chorea in early life. When it attacks very young children under three years the movements are curiously irregular, much less voluntary, more aimless, and exceedingly like the curious movements that I have seen in a rabbit as a result of intra-venous inoculation and in which the diplococci were demonstrated in the pia mater and brain. In older and particularly intellectual children the higher movements, those of the developing emotions, are sometimes greatly deranged, and curious attacks of a maniacal character are witnessed. Females are much more susceptible than males, and I am old-fashioned enough to believe that this marks a natural tendency to instability in the female brain. I would even go further and say that there must be some mysterious difference in the female metabolism, for not only do we find chorea more frequent and more chronic, but heart disease is more chronic as witnessed by mitral stenosis, and arthritis more chronic as witnessed by the tendency to rheumatoid affections in the later life of women who have been subject to rheumatism in childhood. What we call chorea is the fully developed disease with its remarkable irregular movements, loss of power, and other disabilities with which I need not detain you. I am more intent upon the pathology of the process and the condition of the nervous system. The onset may be abrupt, or acute, or very gradual. Occasionally we come across a case in which the onset reminds one of a cerebral embolus. There is a sudden com-

plaint of severe headache and partial paralysis, and the next day chorea commences and may be hemiplegic in type. I have never seen an autopsy on such a case, but it is tempting to believe that there has been a sudden cerebral infection, possibly from a cardiac vegetation, and the drawing I show you from the mitral (Fig. 1) valve of an acutely fatal case supports this possibility; further, we know from experiment that the rheumatic lesions develop with great rapidity when the infection is massive. The insidious cases seem to

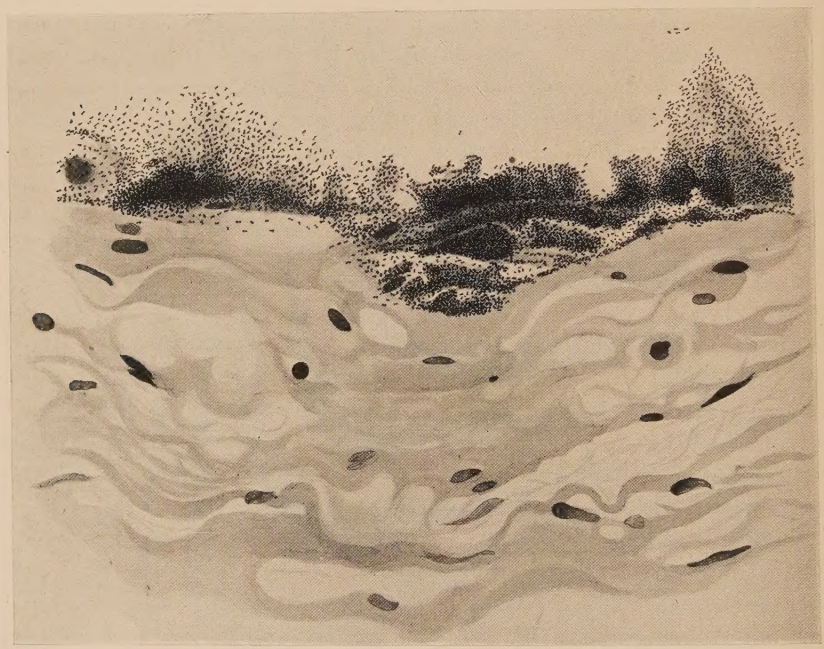

FIG. 1.—A section through the mitral valve from a case of acutely fatal chorea in which there was early acute endocarditis. The vegetations were minute, but vast numbers of the diplococci are visible in the tissues. (Poynton and Paine.)

me very instructive, for it is surprising how long a period—many weeks—may pass with a child showing the early signs of rheumatic cerebral disease before the obvious chorea shows itself. If we inquire as to what these warnings are, we find undue nervousness, headache, excited imaginings, sometimes bordering on delusions, night-terrors, irritability and fidgetiness. It is very probable if the temperature were taken that we should find a slight but definite fever. You can readily understand that during this phase a sudden fright or shock might precipitate the development of the chorea.

This insidious onset is of particular interest for several reasons. In the first place it brings rheumatism into line with other important infections, notably tuberculosis. It is an accepted fact that this latter disease may commence with indeterminate signs of ill-health, during which time we may suspect, but cannot determine, the actual cause, because our methods are at present comparatively crude. Again, it brings to your notice a great gap in our present knowledge of rheumatism, and that is the relative parts taken by the infective agent and by its toxins. These may well vary much in different cases, and indeed clinical study of the disease justifies such a presumption. There are, for instance, certain groups of cases in which a great deal of œdematous swelling appears around the infected joints, an œdema which reminds one of that produced by the sting of an insect. In these cases it is quite conceivable that the toxins of the micrococcus are peculiarly irritating either to the particular tissues or on account of the particular tissues of the individual. In chorea this early stage of warning may then depend upon the toxins produced by comparatively few bacteria.

Then, again, if such a sensitive organ as the brain will show such comparatively indefinite signs over so long periods, does it not suggest that a structure like the mitral valve may often be damaged for long periods also without giving rise to any signs that attract attention? This is the more likely when it it remembered that mitral stenosis most frequently commences in childhood in association with chronic and repeated chorea.

Chorea reminds us of yet another possibility in rheumatism which is of the greatest importance. Some cases may continue for years, they improve, and they are sent out of the hospital after prolonged treatment almost but not quite well. When they return to my out-patient department I find they have choreiform movements and manners, and that as a rule the return to home life has made these more obvious. Often enough they relapse, and I have some patients who have had seven or eight relapses in a few years. You might reply to me that this was largely the result of a permanent but slight brain injury from the first attack of chorea, and with excellent reason might dwell upon the fact that in all cases of rheumatic chorea we must bear in mind not only the infective process, but also the peculiar difficulty that nerve-tissue has in recovering from such a process. This, however, is not the entire explanation of such cases. I readily admit that the nervous tissues in such children are very slow in recovery, but we have also good evidence of renewed activity of infection in the increasing mitral stenosis that is apparent

after the repeated relapses. The particular point, the outcome of these observations, to which I would draw your attention is the probability that with cardiac lesions the same difficulty in estimating the recovery may arise, and that much more often than we believe patients leave our care with vegetations which are not really healed but are only comparatively quiescent. In former lectures I have made a point of stating that I have entirely cast over the widely held view that malignant endocarditis in the rheumatic is necessarily due to the invasion of scarred valves by secondary infections as irrational and unsupported by solid facts, favouring the view that it is often a truly rheumatic phenomenon, peculiar only in its tenacity and local virulence. Once more I would ask you, if you accept rheumatic endocarditis as infective, do you not think it a most unprecedented pathological fact that this endocarditis should always heal? Is it not much more probable that the healing processes may sometimes fail? If this is the case what kind of endocarditis do you think would result?

Chorea and epilepsy are not altogether rare, and I have watched several cases over a good many years; but it seems to me that they are associated and not interdependent cerebral lesions. On the other hand, chronic chorea seems to bring with it a distinct weakness of mind in some children, and one case of this kind which I traced until a chorea occurred during pregnancy was certainly on the borderland between the sane and insane. Several children under my care with chronic chorea have seemed to me very defective in mentality.

In acute attacks there may be definite delusions but they have always in my experience disappeared entirely with recovery.

It is a very interesting fact that after an attack of rheumatic chorea the character of a child may change very greatly. Mothers will tell you of extreme nervousness, irritability and lack of sustained effort, which were not noticeable before, and which I interpret as evidence of the extreme subtlety of the rheumatic poisons. Clearly when studying such conditions as these we are coming very close to the domain of the alienist, and are led to watch with interest all work on their side which throws light upon infective processes as a cause of insanity.

Another interesting point is the development of stammering after chorea. The speech affections of chorea apart from its possible tendency to favour subsequent stammering are also very interesting. The tongue is sometimes much affected—disproportionately so—and the necessary movements for the making of vocal sounds so damaged as to make speech impossible. Then, again, with right hemichorea,

there may be great interference with speech, and lastly a child may make no attempt to speak for many months and remain quite dumb. In all cases recovery occurs.

Pathology.

I have studied with Dr. Paine the bacteriology of fatal rheumatic chorea, and later I had the good fortune to be able to work with Dr. Gordon Holmes upon the minute pathology. Thanks to their assistance I am able to-day to show you drawings from the histological sections and films, which illustrate some of the important points, and with these I can show you how far such investigations have gone toward the explanation of chorea.

I will add here that all the drawings I am showing to-day are taken from preparations that have been demonstrated at the important medical societies.

The first I show is from a rabbit that died of carditis, and which during life had shown some curious twitching movements, sudden and involuntary in character, which resembled those of human chorea—they show the diplococci close to a blood-vessel in the pia mater (Fig. 2).

Compare Fig. 2 with Fig. 4, which is from a fatal human chorea. It is a film of the pia mater showing a blood-vessel with cellular exudation and the diplococci in the near vicinity.

This section of the mitral valve from a fatal chorea is an interesting demonstration of the presence of the micrococci in those tissues (Fig. 1).

These drawings illustrate the invasion of the cerebral tissues by the diplococci as I imagined it to occur in chorea.

The methods consist in making large films of the pia mater, staining and then clearing them, and looking along the minute blood-capillaries.

Secondly, films are made of brain substance from the cortex, and thirdly, sections of the cerebral tissue are made.

We now turn to some of the changes in the nervous system in fatal chorea as demonstrated by Dr. Gordon Holmes. The capillary diapedesis and vascular thrombosis I have already shown you.

As elsewhere with rheumatic lesions we get two classes of change, the vascular and inflammatory type, producing hyperæmia, minute thromboses, cellular and serous exudations, and probably in the chronic cases some little fibrosis. In the cerebral tissues themselves we get minute areas of softening. The nerve-cells particularly in

the cortical regions are swollen, and show the phenomenon of chromatolysis as illustrated by this drawing (Fig. 4). In some of the cells you will also notice that the nuclei are excentric. In those most affected there is also shrinking and loss of power to retain the staining reagents. Degenerated nerve-fibres were only found excep-

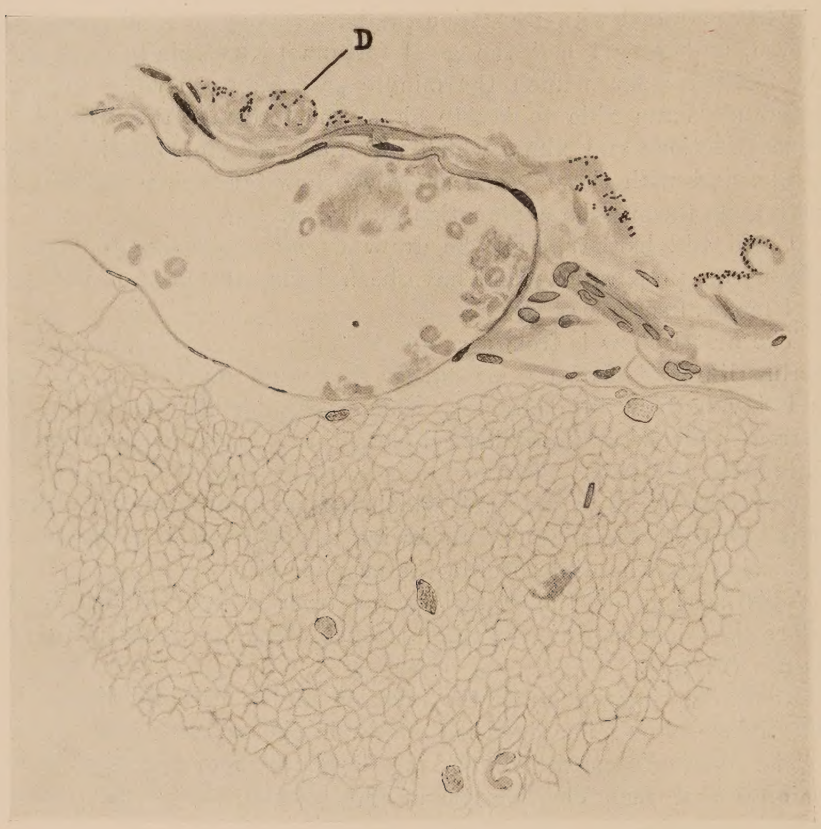

FIG. 2.—A section through the pia mater and cortex cerebri of a rabbit, which during life had shown for some days remarkable twitching movements of face and limbs the result of an intra-venous inoculation with the *Diplococcus rheumaticus*. Multiple arthritis also resulted. The figure shows a dilated blood-vessel in the pia mater, and D points to diplococci in the pia mater. (Poynton and Paine.)

tionally in our cases. Thus it is clear that the character of changes in the tissues of the brain in chorea is such as you meet with in a toxic process of mild degree. One is, I think, also forced to the conclusion that the rheumatic infection does not thrive with great facility in the cerebral tissues, or produce there toxins of extreme

virulence, for if this were the case, there would be much necrosis of cells and consequent degeneration of axis cylinders, and the development of a spastic diplegia of greater or less severity. Though,

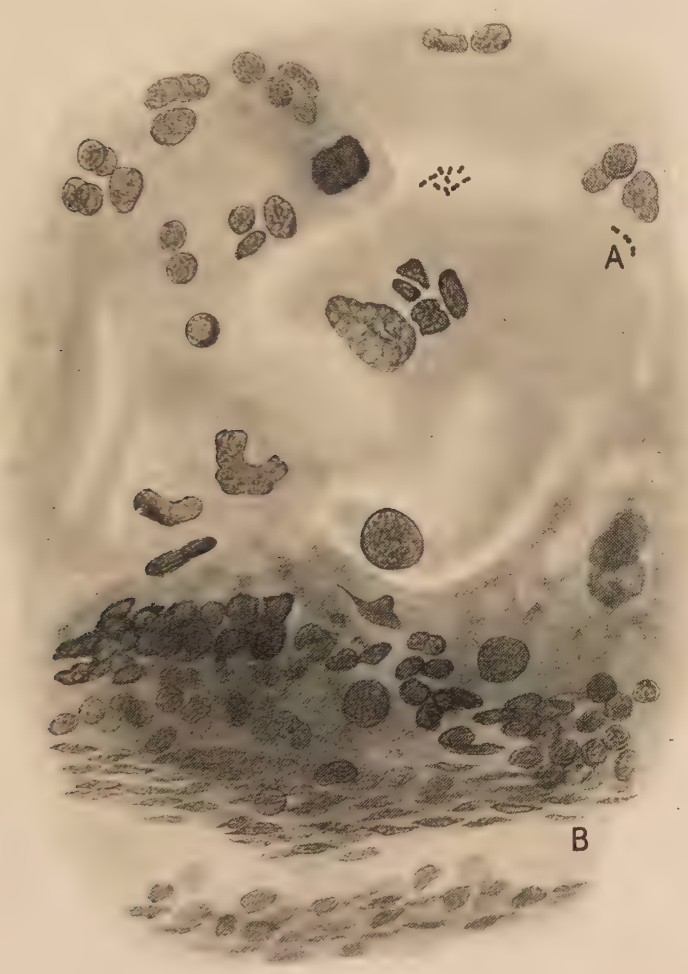

FIG. 3—A film of pia mater from a fatal case of chorea (human). B is placed in the lumen of a capillary blood-vessel. A points to diplococci lying in the pia mater adjacent. (Poynton and Paine.)

however, not severe, the changes in the nerve-cells in the brain are very widespread, and as a clinical example of this Dr. Langmead has pointed out the occurrence of nystagmus, which in one of my cases was repeated on several occasions with each relapse of chorea.

I have no experience of the changes in the spinal cord in this disease. Triboulet *père,* many years ago, directed attention to peripheral symptoms in chorea, and you will not infrequently find that children complain of tingling and darting pains in their hands and feet in the early phases of this disease.

Analysis of Cases of Chorea.

I will next give you a few figures from a series of 500 consecutive cases of rheumatism. Let me first of all remark that in this series

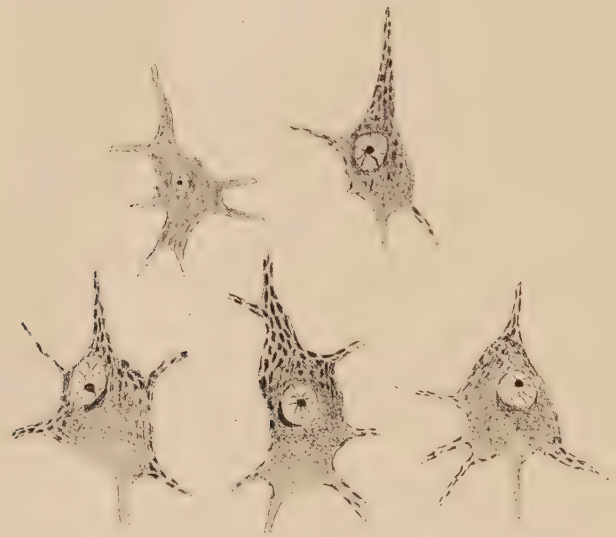

Fig. 4.—Two large pyramidal cells, and three Betz cells from the precentral convolution of a fatal case of chorea (human), illustrating various stages of chromatolysis. (Gordon Holmes.)

I have placed all cases of chorea that came to me during the period over which the investigation took place. That is, I have taken a course which is the opposite of that usually adopted, and assumed the point that I want to make. I have taken all these cases of chorea as rheumatic and then critically examined the evidence I possessed for making such an assumption.

Of the 500 cases of rheumatism, 225 came to me with chorea as one or the only symptom. None has been considered twice, although there were a considerable number of relapsing cases.

In 8 my notes were imperfect and useless, leaving only 217 for analysis: 122 of these had obvious heart disease and many of them other symptoms of rheumatism; 28 more had no convincing signs

of organic valvular disease, but were suffering from rheumatic arthritis and pains; 150 of the number are thus disposed of.

Of the remaining 67, in 22 cases there was dilatation of the heart.

Now there is considerable divergence of opinion upon the accurate diagnosis and significance of dilatation of the heart in chorea. For my part I am convinced, with my former teacher Dr. D. B. Lees, with whom I had the honour of working on the subject twelve years ago, of its frequency and importance as evidence of a rheumatic toxæmia. Nevertheless, I have not put this group of 22 cases with the previous two groups, which are evidently rheumatic in nature.

The present position of the figures is accordingly this: Of 217 cares of chorea with careful notes 150 were clearly rheumatic.

The remaining 67 cases came to the hospital with no gross heart disease, but 22 of them with what I regarded as evidence of dilatation. They showed, however, no arthritis or other cardinal evidence of the rheumatic state.

What other facts have I about these 67 cases? Before I answer this question, I must point out an initial difficulty, namely that of deciding what is to constitute a fright or brain shock. In spite of this we shall all be agreed that when there is no evidence at all of fright or brain shock forthcoming, this cause must not be assumed.

In 52 of the 67 cases, that is, in all but fifteen, there was no history of fright or strain that the parents could discover, and so we are driven to search for any evidence, past or future, that might throw light on the cause of the illness, in all but the fifteen attributed to fright: 7 I traced later as suffering from rheumatic heart disease and one of these who came originally for chorea, with absolutely no guide as to its cause, died three years later in University College Hospital of rheumatic carditis, under my observation. Another is now under me in the same hospital, in the last stage of chronic rheumatic heart disease; and another developed rheumatic arthritis in the hospital after admission.

In 10 of the cases chorea directly followed a sore throat.

In one case the mother had suffered from chorea, which might be interpreted to suit any view if it had not been that two sisters had also suffered from chorea and one from rheumatic fever.

In 19 I found a history of rheumatic fever in the family.

Fifteen of the 52 remain in whom I could get no light as to the cause at all, but two of these came back to me later with rheumatic heart disease.

We are now left with the fifteen ascribed to fright and shock.

Eight of these were directly attributed to overstrain at school and

in one of them two attacks were looked upon as the result of canings; but it was admitted that the boy had been troublesome and inattentive for some days beforehand.

One case was supposed to result from the sight of two men fighting.

One was ascribed to a fall in which the child injured an eye, but the chorea did not follow until twelve months later.

One was attributed to a dog jumping up at the child, the chorea following some weeks later.

One developed four days after the patient had seen her brother strike her father. It is noteworthy that the father had suffered from two attacks of rheumatic fever, and that some years later this child attended me for heart disease.

One very suggestive case followed within a week the overturning of a perambulator with two small children in it by the patient. It must be added that a sister suffered from rheumatic fever.

One case followed upon a boy putting a penny into a machine in return for which he was rewarded with an electric shock.

In the last case, a runaway horse came straight for a little girl, and so frightened her that she was brought back in a "fit" and two days later developed chorea.

This record supports what many authorities have long maintained, that the main cause of chorea is rheumatism, and even reduces the question of fright and brain strain to the position of being interpreted as the active factor in producing the actually developed disease in tissues already unstable with rheumatism.

Treatment.

You are doubtless aware of the general fact that the more acute the onset of chorea the more rapid the course may be, whereas the subacute cases may linger on for many weeks and even months. This point has its scientific interest, for it helps to bring to your mind the two essential data that must guide you in the treatment. These are the activity of the infection and the particular nervous system of the individual. If the toxæmia is severe but the nervous system a healthy one, we may expect that the poison will be thrown off with more ease than when from the outset the child is highly unstable. There is another point I want to direct your attention to, which is, that chorea is very rarely fatal in itself. Almost invariably when death occurs it is the result of carditis. For this reason it

seems to me to be a great mistake in the present state of our knowledge to run any risk with powerful drugs. Yet there is sometimes a temptation to do this, because it may happen that you have upon some occasion pushed a drug and obtained a remarkable improvement. Now, I would assure you from a wide experience of chorea, that such a result may be obtained under many different circumstances. I have seen it follow the use of arsenic, chloral, trional, salicylate of soda, and also the abandonment of all treatment by drugs. There is no disease that is more uncertain in its course, and nothing short of a fairly uniform result from any particular treatment, in at least fifty cases would carry conviction to my mind that a remedy had been hit upon. To-day, if you ask me, in a case of developed chorea, how long I should expect the symptoms to last, I should think myself lucky if I had obtained a cure in six weeks. You will understand, then, that when I am asked, How do I treat chorea? I do not mention some particular drug or offer a prescription. I should like to be able to say that I destroy the infection in such and such a way and build up the nervous system afterward by such and such a tonic; unfortunately that is not yet possible. Salicylate of soda is the drug that would come to your mind for the first purpose, and for early and mild cases I often use it, combined with the bromides in moderate doses; but in well-developed cases it seems to me ineffectual. Aspirin I do not like as much as salicylate of soda, for it is acid and easily upsets the digestion. Anti-rheumatic serum has proved a failure so far in my hands, and vaccines, at present, I am not in a position to report upon. Rest, physical and mental, we all employ; but even these sometimes want a little consideration. A child surrounded by screens may remain choreic for weeks, and when these screens are taken away recover rapidly, because presumably the time had come when the nerve-cells required some tonic in the shape of brighter surroundings. Warm packs, often used by Sir Thomas Barlow for cases of chorea, repeatedly help you in soothing them for the night.

Whatever drugs or methods you adopt, you must be prepared to meet with some cases which after a few days of apparent improvement suddenly get much worse, and with this relapse there may be a sore throat or evidence of an exacerbation in the rheumatic infection. I have seen many striking examples of this occurrence in our wards.

The next group of drugs, rightly or wrongly, I look upon as entirely palliative; sometimes one will suit, sometimes another, but with the views on the pathology of the disease that I have put before you, I cannot entertain for one moment their curative action.

In the worst cases I prefer chloral and bromide; in other cases trional would seem more serviceable. Some have seen remarkable results with chloretone, others with antipyrin. It seems to me in every instance we are only dulling the nerve response, and though this is useful enough and sometimes demanded by the urgent movements, we are not justified in running to any extreme measures with them, and if one fails when given in moderate doses another may well be tried.

Five years ago I worked with Dr. Sington upon the cerebro-spinal fluid in chorea, and I may add that the diplococcus has been recovered from this fluid. We found that very severe cases were on more than one occasion relieved by lumbar puncture. I do not advocate it as a routine measure, but if you have a very severe case it is worthy of trial. I do not understand why it succeeds, and only mention it as an empirical observation.

Arsenic I use for the cases of chorea in which the movements persist with a normal temperature, cases that I judge require a tonic and alterative for a nervous system unable to regain its normal balance.

Having seen some cases of arsenical neuritis, I am not in favour of massive doses.

Severe cases of chorea require very good nursing and well padded beds. Skilful nasal feeding is sometimes exceedingly useful when there is great difficulty in getting nourishment down, for it saves the strength and allows of a regular supply of food. Always warn your nurses to be on the lookout for sores, for these may become most troublesome; and so look also for sores on the tongue or cheeks, or in the nose, for these by their continual irritation excite the child greatly and they are not uncommon.

The convalescence can be much assisted by fresh air and quiet, and suitable exercise and games for the encouragement of co-ordinated movements.

Rheumatic Neuritis.

Although it is difficult to prove, for such cases are not fatal, there occur sometimes in childhood examples in which the stress of the rheumatic infection falls upon the nerve-trunks. Presumably a certain degree of interstitial neuritis is the result. Severe nerve pains may arise, and irritation may produce facial spasm or blepharospasm, or neuralgic pains with sudden local œdema. In adults we are acquainted with such a condition producing intolerable pain in

the head and scalp with the formation of small intensely tender nodes along the course of nerve-fibres. Occasionally these small tender nodes occur also in childhood. They are cases which may prove very intractable and prone to relapse.

Headache has long been recognised as a trouble to rheumatic children. It is one of the most frequent of the early signs of chorea; and is then usually dull and rather persistent. Migrainous attacks are another symptom. These may be very severe in anæmic rheumatic children suffering from aortic regurgitation, and may mark the commencement of a relapse. They would appear to be a part of that general nervous instability which is such a feature in some of the more delicate rheumatic children.

Phenacetin and caffeine relieve the pain better than aspirin or salicin, and should the attacks increase in frequency they are valuable warning to the physician that the child should have a short but complete rest, a proceeding which does not appeal to these excitable children but does them a great deal of good.

Habit-spasm or facial tic is in my experience more frequent in rheumatic children than in others and though I am quite certain that the tic is not as a rule a true chorea, I would add that it may be extremely difficult to differentiate it from true chorea, and that what one has taken to be a facial tic in a rheumatic child may be followed by true chorea.

Whether we ought to include the rare cases of sclerodermia that sometimes occur in rheumatism among nervous phenomena I am not prepared to say.

The subject of hyperpyrexia is too difficult to enter upon now, and would detain us too long. I will content myself with stating that such evidence as I possess points to it rather as a virulent toxæmia than as a particularly gross bacterial invasion of the body.

SERIES OF MANIFESTATIONS OF ACUTE RHEUMATISM IN A BOY, AGED TEN YEARS.*

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The case of which the following is an account has already on several occasions been the subject of clinical demonstration to students, and is now put on record partly for its own interest, partly

* The case was shown at the Medico-Chirurgical Society of Glasgow on October the 20th, 1911.

to serve as a text for some observations on the manifestations and treatment of acute rheumatism in childhood.

The patient, a boy, aged 10 years, was first admitted to the Western Infirmary Glasgow, on February the 16th, 1911, with a history of having suffered eight weeks previously from pain and swelling in his ankles, knees, shoulders, elbows and hands. The larger joints improved within a few days, but those of the hands remained affected for several weeks. Five weeks after the onset of the illness several little round nodules were felt on the back of the head, which persisted till the time of his admission to hospital. Previously he had not suffered from rheumatism. He had never had tonsillitis, chorea, or scarlet fever. The mother was said to suffer from rheumatism in her hands, otherwise the family history was unimportant.

Condition on admission.—The boy was fairly well nourished though under normal weight, being 3 st. 9½ lb. without clothes. The skin was moist and free from rash. The mucous membranes were slightly pale. The temperature was normal.

What deserves special notice was the presence of numerous small *subcutaneous fibroid nodules.* These were most numerous and largest in the head, chiefly in the occipital region, though one or two could be felt also in the parietal regions. They were present, too, on the elbows over the condyles and on the olecranon processes ; on the wrists over the ends of the ulnæ and radii, and along the tendons of the flexor muscles ; on the hands over the metacarpo-phalangeal joints, and to a less extent over the interphalangeal joints ; on the legs they were found over the knees at the sides of the patellæ, and on the ankles over the internal and external malleoli. They were absent in other positions where such nodules are often found, for example on the scapulæ, the spines of the vertebræ and the crests of the ilia. In the various situations first mentioned one or two or more nodules were to be found. In size they varied from that of small shot to that of split-peas; a few were even larger. They were subcutaneous and easily felt, but only distinctly seen when the skin was stretched over them as when a joint was flexed. They were firm and hard but not tender; nor was the overlying skin reddened or in any other way involved. The various joints said to have been previously affected were neither swollen nor painful. The arthritis had practically disappeared.

The circulatory system.—The pulse numbered 108 per minute, was regular in force and rhythm, of fair volume, but of rather low tension. The examination of the heart showed the pulsation at the

apex to be diffuse, being felt in the fourth and fifth spaces and in the latter slightly outside the nipple line. The cardiac dulness was a little enlarged, extending transversely from the right border of the sternum to $3\frac{3}{4}$ in. to the left of the mid-line, giving a measurement of $4\frac{1}{4}$ in. The upper border lay on a level with the third rib. At the apex there was heard a short, soft, blowing murmur, ventricular systolic in rhythm and well conducted into the axilla. At the aortic area the cardiac sounds were pure, while at the pulmonic area a ventricular systolic murmur was heard, probably conducted from the apex and followed by an accentuated second sound.

The interpretation of these facts was that the patient suffered from endocarditis leading to mitral regurgitation with slight hypertrophy and dilatation of the chambers of the heart on both sides. These facts were of special importance in view of the later developments.

The examination of the respiratory, digestive, nervous and genito-urinary systems revealed no abnormality of any importance.

The diagnosis was acute rheumatism. The evidence for this lay in the history of arthritis and the presence of subcutaneous fibroid nodules and endocarditis.

Progress.—During his residence the patient was treated with aspirin for over five weeks and kept in bed for nearly four. The nodules gradually became smaller and were all gone before he was dismissed on March the 31st. During all this time the temperature was normal except on the 16th when it rose to 103·2° F. On the two following days the maximum temperatures were 101° F. and 99·6° F. respectively. Thereafter the temperature remained normal till he was dismissed to the Lenzie Convalescent Home.

Second admission.—On April the 28th he was readmitted to hospital with severe *chorea*. He had only been at the convalescent home a week when one evening he got a fright through the breaking of a window in his bedroom, after which he remained nervous and sleepless all night thinking of robbers. When he went home a week later the mother says he was twitching all over and could not speak properly. A fortnight after this he was readmitted to hospital. The choreiform movements were then very bad and affected the whole body. He could not speak and was very emotional. He was thinner and paler than when he left the hospital.

The *rheumatic nodules* had reappeared. They were in the same situations as before, were quite as numerous, and in some parts, *e. g.* the occiput, even larger. Even in the absence of other facts already narrated here was present an important index as to the rheumatic

nature of the chorea. The cardiac condition was practically as it was during his last residence. The temperature was normal.

Progress.—The patient was treated by absolute rest and suitable diet. Chloral hydrate and ammonium bromide as sedatives were given as required, while aspirin was given regularly in view of the rheumatic condition. By the end of three weeks the sedatives were stopped but the aspirin was continued for two or three weeks longer, after which the syrups of iodide of iron and of lactophosphate of lime were substituted. By this time all trace of the chorea and nodules had gone.

At the end of eight weeks (June the 22nd) he was allowed out of bed for a little. The effect of this was a slight evening rise of temperature to 99·4° F. Five days later it rose in the evening to 101° F. The pulse was rapid and soft, numbering 120 per minute. A distressing dry cough developed and he complained of pain over the heart. Next day pericardial friction was detected so that another link, in the form of *pericarditis*, had to be added to the chain of rheumatic events. The pericardial friction sound was characteristic and best heard at the base of the heart and down the sternum. At the apex the mitral regurgitant murmur, soft and blowing in character and conducted into the axilla, could be easily differentiated from the friction sound. The area of cardiac dulness remained the same, indicating that at the time there was neither any further dilatation of the heart nor any great pericardial effusion. Shortly after the onset of the pericarditis the rheumatic nodules again appeared, but not to the same extent.

For a week the patient remained very ill. His face assumed an aspect of anxiety; his breathing became so embarrassed that he required to be propped up in bed. He was restless and sleepless. The temperature was moderately elevated but irregular; only once was it as high as 102·6° F., at which time the pulse was very soft and rapid, numbering 158 per minute.

On July the 2nd signs of left *pleural effusion* were detected and the right border of cardiac dulness was found two inches to the right of the mid-line; this was ascribed to displacement of the heart. The signs of the effusion were more marked on the following day. This pleurisy was another link in the rheumatic series.

During this period the patient was treated again with aspirin and small doses of ammonium bromide and syrup of codeine. As the patient objected strongly to the application over the heart of the ice bag as recommended by Lees, warm gamgee and belladonna liniment were applied instead and apparently with some relief.

From July the 4th there was a gradual and progressive improvement, so that within a fortnight the signs of pericarditis and pleurisy were practically gone. The only fact necessary to record now is that the patient had two slight *recurrences of the chorea*, the first in the beginning of August a week after he had been allowed out of bed, the second at the end of September, after having been allowed up for a short time daily for the month previous. Rest in bed and aspirin stopped the recurrences very promptly. The fibroid nodules were never much in evidence after the acute illness in July, though careful search would reveal one or two from time to time. When he was dismissed from the hospital on November the 7th he was very well except for the cardiac lesion. The right and left borders of cardiac dulness lay 1 in. to the right and 3¼ in. to the left of the mid-line respectively. The mitral regurgitant murmur was very loud. The condition evidently was fully compensated for, cardiac symptoms being entirely absent. The nodules had disappeared.

Remarks.—Acute rheumatism in childhood is clinically very different from the same affection in adults. It is very exceptional for a young child to be admitted to the hospital with high fever, perspiring, and with joints so swollen and painful that movement in bed is impossible without great suffering. More common is it, as in the case described, to have the child admitted on account of some other manifestation of rheumatism, and with a history of a comparatively mild attack of arthritis, or with one of indefinite pains in the limbs without much apparent affection of the joints.

Rheumatic series.—The manifestations of rheumatism in children are very varied. The more certain of these are endocarditis, pericarditis, pleurisy, tonsillitis, exudative erythema, chorea and subcutaneous nodules. These along with arthritis constitute what Cheadle has called the rheumatic series. While more of these affections individually may owe their origin to some other cause than rheumatism, yet their association in children especially with the occurrence of nodules point to this as the undoubted cause. Among Cheadle's cases the one (1) which showed the largest number of events was that of a boy, aged 4½ years, who had during sixteen months before death, chorea, endocarditis, arthritis, subcutaneous nodules, erythema marginatum, and tonsillitis. In the case I have recorded here there is a series as complete though slightly different, consisting of arthritis, subcutaneous nodules, endocarditis, pericarditis, pleurisy, and chorea. These occurred variously combined, forming different phases of the illness all within seven months, though he was under observation for a longer time.

Subcutaneous fibroid nodules.—Barlow and Warner (2) in 1881 first pointed out the true clinical significance of these nodules, though their actual occurrence had been recognised by others before that time. These nodules are regarded as manifestations of acute or subacute rheumatism and are much more frequently seen in children than in adults. Often their presence is missed on account of their small size, and because they are not carefully looked for. They develop mostly in the neighbourhood of joints, but the joints are not usually affected at the time though they may have been shortly before. Thus they often appear when the temperature is normal. They are usually associated with other manifestations of rheumatism, particularly endocarditis, and this often assumes a severe and progressive form, which may terminate fatally. Sometimes the nodules present are very few, sometimes many. In the latter case they often appear in crops. The individual nodule may last from a few days to several months. Sometimes they diminish, to increase in size again. Ultimately they disappear spontaneously, leaving no visible or palpable evidence of their past existence. They are to be distinguished from the nodules that occur in association with chronic rheumatism (3) and rheumatoid arthritis. These latter occur in adults, are usually larger and tender on pressure, sometimes cause pain from implication of nerves, and tend to persist indefinitely. They are not accompanied as a rule by any cardiac complication.

Chorea.—No single case could better show the relation of chorea to other rheumatic manifestations of childhood, though more convincing evidence of this relationship has been obtained from a large series of cases of chorea, (1) where the proportion of those affected with rheumatism, before and after, has been determined, and where at the same time the very varied nature of this latter affection in children has been recognised. Though chorea in children is evidently a rheumatic affection in most cases, it is possible that it may occur apart from rheumatism. In the case described endocarditis, nodules and chorea were present together. For diagnosis the presence of these nodules is worth a great deal, as they may be taken as undoubted evidence of the rheumatic nature of the chorea as well as of the endocarditis.

Cardiac and pleural lesions.—Endocarditis accompanying rheumatic nodules is often of a serious type, tending, according to Cheadle, to be progressive and often to end fatally. In the case described, however, there was little variation in the murmurs to indicate a serious outlook. The dangerous development was the occurrence of

pericarditis. Rheumatic pericarditis of all forms is the most hopeful, but one has to reckon on the presence of myocarditis as well, a condition which has most to do with the production of cardiac failure. The child, however, passed through this critical period safely.

Fever.—Throughout the long period the child was under observation, and the rheumatism in some form was in evidence, the temperature was normal with the exception of the period when pericarditis and pleurisy were present. From this it may be gathered that even in the absence of fever, the rheumatic poison, whatever its nature, is capable of producing some of its effects, for example nodules and chorea; even in the absence of rheumatic manifestations the poison may still be present in the tissues ready to declare itself on a favourable opportunity; treatment should therefore be thorough and long continued.

Treatment.—During the early febrile period of rheumatism no medicinal treatment is so good as the exhibition of sodium salicylate and sodium bicarbonate. These medicines may be pushed at first, but should be continued in moderate doses for a considerable time after the temperature has subsided. If there should be a recrudescence of the fever the dose should be increased. If in spite of this the fever continues, quinine salicylate often acts well. If the joints are swollen and painful the local application of methyl-salicylate gives great relief.

When endocarditis occurs the salicylate treatment I believe is quite safe and beneficial. With pericarditis more care is required. The cardiac distress yields sometimes to the local application of the ice-bag as recommended by Lees. The effect is to slow and steady the cardiac action. If this fails belladonna liniment and warm gamgee may be tried. In the absence of signs of cardiac failure, rheumatic pericarditis may be safely treated with sodium salicylate and sodium bicarbonate in moderate doses, combined if necessary with tincture of nux vomica. If there is any doubt as to the purity of the first the natural product should be used. If the salicylates produce any distinct depression, the alkalis may be used in combination with the cardiac tonics and the salicylates stopped. Strychnine may be held in reserve for the more grave conditions.

The essential part of the treatment of rheumatic chorea is quietness, rest and feeding, but excessive movements should be controlled by chloral hydrate and the bromides; later on, or in the mild cases from the beginning, the salicylates may be employed. Aspirin in moderate doses is often used. During convalescence,

tonics, *e. g.* calcium, iron, quinine and arsenic, are all useful. The last may be used from the beginning of the illness when not of a severe type instead of the salicylates. In acute rheumatism of childhood, whatever form of medicinal treatment is adopted it is essential that plenty of time be devoted to the cure of the patient. Six months or more, not necessarily altogether in bed, given to the treatment of a first attack, may save a young patient from a life-long legacy in the form of chronic valvular disease of the heart—a condition which may afterwards prevent him from earning his livelihood by any work which involves any great degree of physical strain.

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London and Provincial Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, December the 15th, 1911.

Dr. G. A. Sutherland, *President, in the Chair.*

DISCUSSION ON THE TREATMENT OF TUBERCULOUS JOINT DISEASE IN CHILDREN.

Mr. A. H. Tubby, dealt with the "indications for surgical interference in, and the nature of the operations which may be performed for, the treatment of tubercular joint disease in children." He said that on account of the structure of bones and joints the period under discussion should be extended to the fifteenth year, as that is the time when activity of growth of bone ceases. He described tuberculosis of joints as such only in its initial stages, and all succeeding conditions of the parts, as a rule, avoidable sequelæ. The disease was not merely a joint affection, but was a manifestation of tubercular affection occurring in the joints. He pointed out the differences between the progress of tuberculosis of bone in children and adults, and showed that whereas in adults there is a tendency to limit extension of the disease by the formation of a fibrous barrier around it, in children this did not exist.

After reviewing the earlier methods of treatment he said that three factors were responsible for the great changes which had occurred in practice. These were (1) the effect of climatic and sanatorium treatment;

(2) the valuable aids to the diagnosis given by the Röntgen rays; and (3) the use of the new forms of tuberculin. In any case the duration of the disease must be reckoned in years and not in months. He was of opinion that the less surgical intervention was required in children under fifteen years of age, the better was the outlook as to recovery from the disease and the functional use of the part.

With reference to operative measures, he stated that abscesses responded more favourably to aspiration with injection of iodoform or camphor-thymol, than to incision and drainage. The tests of success of the more radical operations upon the joints were discussed. He regarded excision of the hip as a far from successful operation in any case. In the knee erasion was considered, but he preferred conservative measures, and if these failed he performed excision. In the upper extremities the problems were different from those in the lower, because in the former, highly complex movements were most important, and in the latter, weight-bearing stability was the main function. Therefore, if in operations on the joints of the upper extremity movements could be preserved, he advocated operation at an earlier date.

The treatment of focal and para-articular lesions was discussed, and finally dactylitis, a very formidable type of the disease, alluded to.

In conclusion he felt that conservative measures yielded better results both as to the cure of the disease and retention of function than the so-called radical operations.

Sir Anthony Bowlby dealt with "the results obtainable without operation." He said that tuberculous diseases of the joints in children stood in a different position from similar diseases in the adult because of the much greater powers of resistance and repair shown by the affected tissues. He alluded to the pathological processes in tubercular infection of the bone, pointing out how rapidly bone might be absorbed in children, and suppuration only occasionally occurred. The growth of bone in the child was very rapid, and it was this absorption of tubercular bone and the growth of new bone which enabled the tubercular joints of children to repair themselves in so remarkable a manner. The soft parts in the child had this power of repair which was denied to the adult. But these powers of repair must depend largely upon the health and nutrition of the child, and hence it was imperative to attend to the general health. Good and plentiful food of an easily assimilable nature, in which milk played an important part, was essential. The bowels should be regulated, and iron, cod-liver oil and malt administered. All possible sources of ill-health should be attended to, especially tonsils, adenoids and carious teeth. The local treatment of the joints by splints was considered, and the recumbent position, even when a joint of the upper limb was involved, was insisted upon for a time. Emphasis was laid upon the importance of the open-air life. He thought he had seen tuberculin in some cases do some good. The advent of asepsis had completely altered the picture of tubercle in joints, and death was more often caused by sepsis than by tubercle. The greatest possible care was necessary in dealing with abscesses to prevent the joint becoming septic, and at the same time great care was necessary not to infect the neighbouring tissues with tubercle. His treatment of abscesses was aseptic incision and temporary drainage.

Even when there were open and septic sinuses, in the larger number of cases the limb could be saved by directing one's efforts to the general health of the child, and by doing all that could be done locally, and by the use of vaccines to obtain aseptic conditions. He amputated less and less frequently

for even apparently desperate conditions, for he had seen children recover from most extensive emaciation and amyloid disease with hectic fever, treated upon conservative lines.

The condition of the joint after recovery was considered, and in many cases treated early and for a sufficient length of time he had seen complete restoration of function, and except for a little impairment in the bulk of the limb it had been impossible to tell which joint had been involved. Almost all cases taken in the early stages were really curable in the widest sense of the term.

In his experience tuberculosis of the lungs or glands was a very rare complication. Occasionally a general tuberculosis occurred. In some cases the disease was polyarticular.

In concluding he gave a very favourable view of the curability of tubercular joint disease in children, expressing his opinion that what was wanted was increased accommodation in hospitals in the country for the treatment of the disease.

Dr. A. Butler Harris dealt with "the *rôle* of vaccine therapy." The Royal Commission in their final report had published evidence which went to prove that a considerable amount of tuberculosis in childhood was to be ascribed to infection with bacilli of the bovine type, transmitted in meals consisting largely of cow's milk. It was generally recognised, though not sufficiently guarded against, that tubercle bacilli were abundantly present in the milk of cows suffering from tubercular disease of the udder. But bacilli might also be present in the milk of tubercular cows which showed no evidence of disease of the udder, even when examined post mortem. Amongst working classes, environment, as well as food, was an important factor, and it must be admitted that a very considerable number of bacilli found in the joints of children gave the human reaction. As far as was known at present it did not appear to matter much whether, in the joint affections of children, the strain was of the human or bovine origin. The same tuberculin appeared to do well in every case, and the opsonic indices came out equally whether one or other strain was used. It mattered, however, in respect to the general hygiene of the child, for the surroundings must be as free from tubercle bacilli as the food.

In the diagnosis of tubercular joint affections, massive injections of old tuberculin had been abandoned: Calmette's reaction was out of favour with many, and von Pirquet's reaction, although reliable as to the diagnosis of tuberculosis in the human subject, could not differentiate the site of any particular lesion. The estimation of a series of tuberculo-opsonic indices was undoubtedly of use in the diagnosis. The method of estimating the indices was described. The objections to the use of the opsonic index, and the liabilities of error were mentioned, but in spite of these it was maintained that it was of considerable use in diagnosis.

Two methods of treatment were discussed: (1) Methods which will produce auto-inoculation; (2) administration of tuberculin.

Auto-inoculation was only practicable in the method of passive congestion, and in such the dosage could not be regulated, and a steep negative phase might result. The method was only practicable in joints distal from the trunk, and it was easy to realise that distal joints were less liable to pour excess of inoculating material into the body than the proximal ones. Ankles and wrists did better than knees and elbows under this treatment; it was not recommended for shoulders and hips. The advantage claimed for this method was that an autogenous vaccine was introduced. This, however, was

of little moment, since there was no evidence to show that one strain of tuberculin was better than another when used for therapeutic inoculation.

The administration of tuberculin was fully discussed, and the conditions under which it should be given. The information as to the value of tuberculin received in answer to a circular letter sent to thirteen hospitals was presented. The evidence was somewhat divergent: it was concluded that tuberculin, given in small doses under conditions of surgical rest, was a remedy which tended to accelerate the rate of recovery. It was generally the practice to administer Koch's tuberculin of human origin, whether the infection was of the bovine or human strain, and children on the whole did better on this than on the bovine strain. It was not necessary to employ the opsonic index during the whole course of treatment, provided the case was clinically pursuing a favourable course.

Mr. Robert Jones (Liverpool) said that there existed the greatest possible difference between tubercle in the child and that in the adult. Tubercle in the early stage in children nearly always ran a benign course, provided that certain things were attended to. The first was that the affected part should have absolute rest, secondly, the child should have absolutely good food, and thirdly, it should have good country air. He emphasised the importance of children being out of doors both day and night.

Immobilisation of the joint should be very complete, and care should be given to the position of the limb, which he described in detail. Children were often taken out of their splints too soon. He described his tests of recovery. His practice was never to open an abscess until it came up to the surface, and then only by a very small puncture.

Sir Watson Cheyne drew attention to the former practice, which was almost always operating, and said that now he practically never operated for a tuberculous joint in a child. He could not help thinking that tubercular disease of joints was milder than it was formerly; whether it was that the bacilli were less virulent he did not know. It was known there were diseases which gradually died out. The modern mode of living was certainly more hygienic. Operation for such diseases in children could not be put out of mind altogether; when in the early stage the disease was in one focus, removing that focus produced the best results.

In the treatment of abscess he employed antisepsis and asepsis, opened freely and scraped it out.

He always used tuberculin, and thought it did no harm, but he had not yet seen a definite good result which he could attribute to it.

Mr. H. J. Gauvain (Alton) was an ardent supporter of the conservative treatment, but was fully alive to the importance of radical treatment under special circumstances. His experience led him to believe that in many cases the course of the disease could be foretold, and if it were likely to run a serious course he believed in early operation. Abscesses he invariably aspirated.

He emphasised the importance of treating these children in the best country air, in country hospitals specially equipped for the purpose. If all early cases were so treated there would be about 95 per cent. of recoveries, mostly without deformity.

Mr. J. Jackson Clarke raised the point as to the number of cases apparently cured in infancy and the number which had recurred in later life. He said that there were a certain number which broke out again in later life. He had not seen a case ameliorated by tuberculin which had resisted other treatment.

Mr. Sutcliffe (Margate) emphasised the long duration of time these cases required to heal. It took many years to heal a case of tubercle; the average time for a tuberculous knee or hip was four or five years. Hip cases did best if continually kept in bed for many months. He used tuberculin, but could not say he had seen any definite results from it.

Mr. E. M. Corner said that if there were abscesses the case would sooner or later come to operation, and he preferred to incise the abscess, wash it out and employ temporary drainage.

With regard to the number of cases which heal without operation he suggested that diagnosis was of importance. The diagnosis of a tubercular hip was really a diagnosis of inflammation of the joint, and the tuberculous nature was merely a matter of assumption, and the opsonic estimation did not add much to the presumption that it was tuberculous. He had seen a number of cases which were regarded as tuberculous, and gave the tests, which were really not due to tubercle. A good number of so-called tuberculous joints which got well were instances of infection by another organism and not by the tubercle bacillus. His experience with tuberculin agreed with that of the previous speakers, but he had seen cases which did not improve in the ordinary way get well when put on tuberculin. He suggested that some of the successes which followed tuberculin treatment were not due to it, but to some unknown factor which was not yet understood.

Mr. Lockhart Mummery advocated the conservative treatment. When obliged to operate he did as little as possible, merely opening an abscess through a small incision, removing any caseous material, and immediately suturing the wound. When septic infection had occurred, he had found after scraping the sinuses that plugging them with gauze soaked in 5 per cent. formalin often gave good results.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

December the 15th, 1911.

Abdominal Tumour Associated with Precocious Sexual Development.—Dr. T. Churton showed a child, aged 5 years, in whom menstruation began at three years of age; the flow was somewhat irregular, but often at intervals of three weeks; it was scanty and painless. Pubic hair grew and breasts enlarged. Five months ago the abdomen began gradually to enlarge but the child was otherwise well. Subsequent operation showed the tumour to be a malignant ovarian, with metastasis.

Sarcoma of Femur Resulting Directly from a Fracture.—Mr. R. Lawford Knaggs.—The patient was a girl, aged 14 years. She was admitted on August the 8th, having broken her left femur obliquely in the lower third. A skiagram showed a normal fracture.

Operation August the 8th; union then sufficiently firm to allow limb to be put up in plaster. When plaster was removed in October there was a large swelling noticed at the seat of fracture, and skiagram showed that much of the lower third of the bone was destroyed by growth. Readmitted on November the 11th. Amputation at hip-joint on November the 15th.

Congenital Shortness of Right Femur, due to Delayed or Absent Ossific Centre in the Head.—Mr. R. Lawford Knaggs.—The patient, aged 1 year, was admitted in January, 1908. The right femur was then three inches shorter than the left. Right femur skiagram—no centre of ossification in the upper epiphysis. This was probably all cartilaginous, for there was a gap between the upper end of the diaphysis (which showed the small trochanter) and the acetabulum. On the inside of the pelvis the inward bulge corresponding to the acetabulum was symmetrical on each side. The great trochanter, neck and head of the femur showed no evidence of ossification. The lower epiphysis of the right femur was not so far advanced in ossification as the corresponding epiphysis of the left femur.

Present condition.—The right limb is much shorter than the other, but with a high boot he can get about well. Patella rudimentary.

Cause.—(?) maternal impression. When the mother was four months pregnant she tripped her right foot coming down some steps and fell.

Fracture of Humerus.—Mr. Lawford Knaggs showed a boy, aged 7 years, who sustained a fracture through the surgical neck of the humerus, with complete displacement of the upper end of the lower fragment to the outer side of the head and adjacent portion of the diaphysis. Operation was necessary. In attempting to bring the fragments into alignment the portion of the shaft still attached to the upper epiphysis tore away, and the removal of this fragment enabled the upper end of the lower fragment to be laid in the vacant bed of periosteum in close apposition to the epiphysial line. Good union resulted.

Cerebral Abscess following Compound Depressed Fracture of the Skull.—Mr. J. F. Dobson.—A boy, aged 9 years, had a brick thrown at his head by another child on September the 20th, causing scalp wound, which suppurated for some time. No operative treatment. Was admitted to the Infirmary on November the 8th, with symptoms of cerebral irritation. The wound was healed. On November the 14th much better, no headache, vomiting or other symptoms. Depression in bone at site of injury. Fluctuating swelling under scar. November the 15th flap turned down, exposing depressed fracture of skull. Depressed fragments, some of which were necrosed, were removed. Aperture in dura mater, through which pus was exuding. This was found to lead into the cavity of a cerebral abscess, from which an ounce of pus was evacuated. Drainage. Recovery without symptoms. The discs were not examined until after the operation, when no sign of optic neuritis was found.

Birth Palsy.—Mr. W. Thompson. The patient was a boy, aged 7 years. There was much wasting of the scapula and upper arm muscles. The triceps, deltoid and scapula muscles appeared to be quite gone, but there was a little of the biceps left. The muscles of the forearm were quite normal in appearance. At the operation the middle cord of the brachial plexus was found to be divided and was grafted into the lower cord. Gradual improvement of the arm took place.

Idiopathic Dilatation of the Colon in a Boy, aged 12 years.—Mr. W. Thompson.—The boy had been troubled since he was seven. He was admitted with a history of rectal incontinence. He ate well, had no vomiting and no pain. The abdomen was large and protuberant.

Rhinitis Caseosa.—Dr. Alex A. Sharp showed two cases: (1) Female, aged 9 years. Complaint: Offensive nasal discharge of several years' dura-

tion. When seen two months ago the right half of the nose was very much broadened, there was threatening suppuration of the tear-duct, and the right nostril was completely filled with a dirty, grey, soft, offensive, putty-like tumour. The tumour was removed some weeks ago, and there is now a very roomy right nostril due to atrophy of the turbinals, especially the inferior, and to the septum being pushed over to the left. There is still some slight discharge from the upper part of the nose. Microscopically the tumour substance is structureless. Organisms: Pneumococci, streptococci, large diplococci, and thin bacilli.

(2) Female, aged 5 years. Condition similar to above, but duration one month. Caseous mass was removed twelve months ago; no return. Interior of nose remains healthy.

Paroxysmal Hæmoglobinuria, with Blood of Pernicious Anæmia Type.—Dr. W. H. Maxwell Telling.—The patient was a boy, aged 15 years, who began to suffer from hæmoglobinuria when about six years old. In 1903 the bladder was explored for vesicle calculus, with a negative result. Since then he had had frequent attacks of hæmoglobinuria every winter, sometimes four times a week. Very rarely he had hæmoglobinuria in the summer, and then an attack *always* followed a fall in temperature. There was no pain of any sort, but just before passing the hæmoglobin he always felt exceedingly cold. There was slight enlargement of the spleen, marked anæmia. He did not suffer from dead fingers.

Blood count.—Red cells, 1,875,000; white cells, 13,600; hæmoglobin 45 per cent.; colour index, 1·2; polymorphonuclear leucocytes, 82 per cent.: mast cells, 1·5; eosinophile cells, ·5; transitional cells, ·5; lymphocytes, 15; large hyaline cells, ·5.

A stained film showed variation in size of red cells, megalocytes being common; some slight variation in shape; considerable polychromatophilia and granular degeneration of the red cells. Nucleated reds were common. The white cells appeared normal. The picture was that of pernicious type of anæmia, with, however, a slight leucocytosis and without any marked poikilocytosis.

Infantile Palsy with Trophic Changes in Epiphysis about Shoulder.—Dr. Maxwell Telling.—The child, aged 2 years, was found with its right arm wedged in a chair. Immediately following this it was feverish for a day or two, and on the third day could not move right arm. Condition was diagnosed as (?) "dislocated clavicle," and treated as such. The mother, on her own responsibility, undid the bandages. The condition was then thought to be probably one of damaged joint, possibly tuberculous. The skiagram now revealed the fact that the upper epiphysis of the humerus was practically non-existent, and the shaft of bone impinging upon the acromion in full outward extension caused some limitation in its movement here was the usual wasting of the muscles of the affected shoulder.

Congress of the Royal Sanitary Institute.

This is to be held at York from July the 29th to August the 3rd, 1912. One of the five sections is devoted to the Hygiene of Infancy and Childhood, the president of this section being Mrs. M. Scharlieb, M.D., M.S., and the recording secretary Prof. Ralph P. Williams, M.D., D.P.H., School Medical Officer, Sheffield.

Philadelphia Pediatric Society.

December the 12th, 1911, J. Torrance Rugh, M.D., President.

Acute Epiphysitis in an Infant.—Dr. John F. Sinclair presented the history and clinical picture of the case, outlining the differential diagnosis from tuberculosis, syphilis, rheumatism, scurvy and gonorrhœal infection. He also pointed out the obscure ætiology and low virulence of the infection. The only treatment was fixation.

Dr. Henry K. Pancoast, by invitation, showed radiograms illustrating the progress of the disease, and explained his findings.

Dr. John H. Jopson had seen the case. Tuberculosis and syphilis were both excluded An acute infection, most probably post-natal, occurred possibly through the umbilical cord. The wrist had probably been slightly injured, and epiphysitis resulted without suppuration. The value of the radiograms in revealing the progressive improvement was well shown.

Dr. James K. Young considered the case not an epiphysitis but as osteitis, since epiphysitis was usually followed by complete destruction of the epiphysis, which did not occur in this infant. He described epiphysitis of the hip, in which the epiphysis completely disappeared with suppuration.

Dr. Sinclair added that before this baby was born the mother had nursed another child with diphtheria, but this could not be proved to play any part in the ætiology.

Diphtheroid Bacilli of the Penis, with Report of Two Cases of True Diphtheria of the Penis following Circumcision.—Dr. John A. Kolmer found diphtheroid bacilli from 100 cultures taken from the penis of boys from six months to thirteen years of age in 40 per cent. of the cases. Seven types of organisms, recording to Wesbrook's classification, were found, 20 per cent. being virulent, 62·5 per cent. doubtful, and 17·5 per cent. negligible. Ten cases for circumcision were cultured just before operation, and forty-eight hours after operation: 5 per cent. were positive before and 3 per cent. after operation. All those cases recovered. Sugar tests indicated that these were not true diphtheria bacilli, and guinea-pig tests for virulence were all negative. The two cases of true diphtheria after circumcision were located upon the wound. Both the sugar tests and guinea-pig tests were positive, showing that these were cases of true diphtheria.

Dr. Jopson had seen one of Dr. Kolmer's cases, and two others. The clinical appearance was frequently characteristic, especially if pseudo-membrane was present. He had noted in these cases persistent swelling with ulceration and absence of tendency to heal, which was seen in circumcision wounds even when infected. Membrane was frequently, but not invariably, present, and a positive culture clinched the diagnosis. The constitutional symptoms were usually mild.

Dr. C. Y. White spoke of the diagnosis of diphtheria as made in the Laboratory of the Philadelphia Board of Health. When rare organisms were found cultures were re-incubated, and in twenty-four hours a positive result could be given. Dr. White had seen two cases of diphtheria following circumcision, with typical membrane. Sugar tests had given good results in England, as they had done in Dr. Kolmer's cases.

Dr. S. McC. Hamill asked whether the cases reported by Dr. Kolmer and those referred by Dr. Jopson had been exposed to other cases of diphtheria. Dr. Hamill thought that the absence of such exposure and the presence of the various types of the organism in these cases suggested a confirmation of the idea that the seemingly non-virulent types might sometimes take on virulency. The suggestion made by Dr. White in his remarks, that they had found in the Health Department that the short thick types of organisms sometimes change their morphology on the first transfer, was a factor which might be thought of in this connection. The entire problem was a difficult one, and in the light of present knowledge, and in the presence of increasing numbers of cases of diphtheria, it would seem to be the duty of the clinician to give his strongest support to the position taken by the Health Department, that all cases showing organisms of a certain class must be considered virulent until proved otherwise.

Dr. Kolmer said that both of his cases gave the usual sugar tests. It was impossible to determine whether these cases had been exposed to diphtheria, as they followed operation performed in the dispensary of the Children's Hospital. Neither case showed the presence of diphtheria bacilli in the nose or throat.

The Occurrence of Venous Hums in Children.—Dr. H. R. M. Landis, and, by invitation, Dr. Isadore Kaufman, read a paper reviewing the literature upon this subject and the theories advanced to explain the occurrence of venous hums, with results from the observation of 99 children and 26 adults. The latter all had tuberculosis. The children were brought to the Phipps Institute because some member of the family had, or was suspected of having, tuberculosis. Venous hums were found in 84 children, being loudest on the right in 42, on the left in 17. There was apparently no relation between tuberculosis and the murmur. They concluded that a venous hum was found in the majority of children under fifteen years of age, tending to diminish in frequency as that age was reached and finally disappearing. When anæmia was present the murmur had less tendency to disappear in the recumbent posture.

Dr. Hamill said that he had been very much interested in Dr. Landis' paper, particularly because he, in conjunction with Dr. Le Boutillier, had studied these venous murmurs somewhat extensively several years ago. The results of their studies corresponded very closely to those of Dr. Landis, especially in relation to their dependence upon anæmia, to the position and distribution of the murmurs, and to the effect of the position of the body upon them. He thought that in their studies they probably found the murmurs having their maximum intensity on the left side more often than Dr. Landis had. Eustace Smith's sign was elicited in several cases, but in children who had no other evidence of enlargement of the peribronchial glands, and they had referred to this murmur as having no diagnostic significance in this connection.

The Comparative Caloric Value of Various Foods used in Infancy and Early Childhood.—Dr. Clifford B. Farr showed portions of foods so adjusted as to produce 100 calories, or in certain cases 25, 50 or 75 calories. Liquid foods and those in powder form were exhibited in graduated nursing bottles, while the solid foods were preserved in specimen jars varying in capacity from 30 to 600 c.c. To each bottle or jar was attached a tag showing the amount of food in grammes or cubic centimetres

required to produce 100 calories, and on the reverse side a diagram representing the relative proportions of calories produced by the proteid, fat and carbohydrate, as well as the weight in grammes of each substance. Thirty bottles illustrated milk in its different forms and dilutions as used in infancy, with various diluents and milk substitutes. Forty jars and bottles represented the articles of diet used in early childhood, including meat, fish, fowl, eggs, vegetables, bread, cereals, fruits, nuts, sweets, and dairy products. Finally, the method of grouping various articles into a dietary and then calculating the caloric value as well as the amount of proteid, fat and carbohydrate was illustrated. Dr. Farr added that, although he had emphasised the value of the method of Fisher in the preparation of diets and in the teaching of food values, he was not unmindful of other important factors. For instance, a ready method of calculating the amounts of proteid, fat and carbohydrate had been provided.

A Rapid and Simple Method of Determining the Caloric Value of Percentage Mixtures.—Dr. Frederick Fraley demonstrated a simple method of determining the caloric value of the baby's food when its percentage is known. He found that twice the fat per cent. plus the sugar per cent. and the proteid per cent. multiplied by one and one quarter times the total quantity in ounces for the day equalled the total caloric value for the day's feedings. $(2F + S + P.) \times 1\frac{1}{4}\ Q = C.$

Dr. Hamill said that Dr. Fraley had kindly given him a copy of his formula some months ago, and that he had used it and found it not only convenient but fully accurate.

Société de Pédiatrie, Paris.

November the 14th, 1911. (*Bulletin No.* 8.)

Decompressive Trephining.—M. Broca, commenting on the case shown by M. Debré at the last meeting, advocated craniectomy to diminish pressure symptoms in cases of cerebral tuberculosis, serous meningitis and even malignant tumours. Very satisfactory results had followed in a case sent to him by M. Comby. The child was almost blind, could not stand upright, and suffered from headache and vomiting. The clinical aspect was that of a small cerebral tumour, probably a tubercle in the mesencephalon.

M. Comby said he had seen the child lately, several months after the operation, and he had completely recovered.

M. Hutinel showed the brain of a child operated on by M. Broca for intra-cranial hypertension. The case was one of posterior basilar meningitis with thickening of the pia mater on the inferior surface of the cerebellum.

Cerebral Rheumatism with Acute Mental Disturbance in a Boy, aged $7\frac{1}{2}$ years; presence of Salicylic Acid in the Cerebro-spinal Fluid.—MM. Nobécourt and Darré.—During the course of acute articular rheumatism with affection of the mitral and aortic valves, the boy was seized on the fifth day of the illness with delirium, hallucinations, hyperæsthesia, followed by mental depression amounting almost to stupor. He had been treated by salicylate of soda, but in small quantities. Lumbar puncture was performed six times, and the reaction for salicylic acid was distinctly obtained in the fluid on the second and third occasions.

The authors discussed the question whether the case was one of cerebral rheumatism or salicylic intoxication. They inclined to the former opinion on account of the long period during which the child suffered from mental disturbance, a long time after the cessation of all salicylic medication.

M. Comby observed that similar mental conditions occurred after typhoid and other infectious fevers, in subjects of neurotic disposition.

M. Guinon said that the disturbance provoked in children by salicylate of soda resembled that of diabetic coma and acetonæmia, in the dyspnœa, coma, acid-smelling urine and breath. He quoted two cases, however, where there had been delirium and hallucinations.

On the Permeability of the Meninges to Salicylate of Soda.—MM. Marfan and Lagane had made investigations on 12 cases, of whom 11 were children between the ages of 4 and 14 years. Two were the subjects of severe acute articular rheumatism, and had taken in the course of 10 and 9 days large doses of salicylate of soda (44 and 28 grm.); the others had had smaller doses—1 to 2 grm. *per diem*. Among these last, 3 were attacked with tuberculous meningitis at the onset, the existence of which was shown by histological and bacteriological examination of the cerebro-spinal fluid and afterwards by autopsy; two had severe chorea without appreciable lymphocytosis in their cerebro-spinal fluid. The 5 others had different ailments, *e.g.* incontinence of urine, epileptiform attacks, Duchenne's paralysis, vomiting with acetonæmia and pleuro-pulmonary congestion. The cerebro-spinal fluids were examined on the second, third and fourth days after the commencement of the treatment and about the eighth or tenth day. In these cases they had noticed the rapid appearance of the reaction characteristic of salicylic acid in the urine and in the pleural fluid, but in none of them in the cerebro-spinal fluid. In the case reported by MM. Nobécourt and Darré there must have been some alteration produced in the meninges by the rheumatism which rendered their cells permeable to the salicylate.

Multiple Fractures in the Newborn.—M. Savariaud showed a child, the subject of multiple intra-uterine fractures (a woodcut is given in the 'Bulletin').

Laryngology in Childhood.—M. Abraud described his instrument for direct laryngoscopy, of which illustrations are given in the 'Bulletin,' and recalled three cases of its use in diffuse papilloma of the cord, syphilis of the larynx, and a foreign body in the larynx. Vincent Dickinson.

Abstracts from Current Literature.

Medicine.

Intra-uterine crying of child ('*Austral. Med. Journ.*,' 1911, I, *p.* 60.—**R. H. Fetherston** narrates a very rare and remarkable case in which a primipara, aged 25 years, gave birth to a child. The presentation was a breech, and the child began to cry as loudly as a new-born child whilst the head was at the fundus and the foot presenting. The child cried for fully three minutes in this position. F. R. B. Atkinson.

Hæmophilia in the newborn; death from hæmorrhage following vaccination (*'Bull. d'Obst. de Paris,'* 1911, xiv, *p.* 272). –**Bonnaire.**—A male infant with no family history of hæmophilia or syphilis was vaccinated on the third day of life. One of the punctures made at 9.30 a.m. began to bleed at once, and after ineffectual attempts to control the hæmorrhage death took place at 5 p.m. The necropsy showed both lungs to be filled with infarcts. The other organs showed no macroscopic lesions.

J. D. Rolleston.

Fatal hæmorrhage in the newborn from a small frontal wound (*'Bull. d'Obst. de Paris,'* 1911, xiv, *p.* 297).—**Commandeur.**—During delivery a child received a small abrasion from the forceps. The hæmorrhage from the wound was stopped by compression, but broke out again the following day, and continued until death early the next morning. Some hæmorrhage from the umbilicus occurred shortly before death. At the necropsy a large hæmatoma was found in the scalp, and a subpleural hæmatoma at the base of the right lung. It was an open question whether the condition was due to hæmophilia or to some infection, the mother having a raised temperature during the first three days of the puerperium. There was no evidence of syphilis.

J. D. Rolleston.

Hæmorrhage from the stomach in the newly born (*'Austral. Med. Gaz.,'* 1911, xxx, *p.* 514).—**M. D. Nesbitt** narrates a case in which thirty hours after delivery the child vomited bright blood on two occasions, and at intervals afterwards dark brown matter. The hæmatemesis ceased after the third day, and the child recovered.

F. R. B. Atkinson.

Melæna neonatorum (*'Thèses de Paris,'* 1911-12, *No.* 69).—**P. Vidal** distinguishes a melæna spuria due to swallowed blood, usually from cracked nipples, and melæna vera due to hæmorrhage within the alimentary canal. The cause of melæna vera may be syphilis, hæmophilia, or infection by any of the following microbes: Streptococcus, B. coli, B. pyocyaneus, Gaertner's bacillus, pneumococcus, B. lactis aërogenes. Melæna vera is usually preceded by hæmatemesis, and is often associated with other hæmorrhages, especially from the umbilicus. The prognosis in melæna spuria is uniformly good, but is very grave in melæna vera. Injections of gelatin or normal saline are recommended for treatment. Twelve illustrative cases are recorded.

J. D. Rolleston.

Vaginal hæmorrhage in the newborn (*'Cleveland Med. Journ.,'* 1911, x, *p.* 689).—**L. A. Pomeroy** records a case in a well-developed first-born child, in whom the cord had been ligatured after it had ceased to pulsate. Nothing abnormal was noted until the third day, when the napkin was found stained with blood. The external genitals were normal, but there was slight oozing from beyond the hymen. The hæmorrhage continued the same for three days, and then gradually grew less, entirely ceasing when the child was eight days old. Thirty-two cases of vaginal hæmorrhage in the newborn were collected by Cullingworth in 1876, and Pomeroy has found twenty more, including the present case.

J. D. Rolleston.

Fatal jaundice of the newly born (*'Austral. Med. Journ.,'* 1911, i, *p.* 149).—**J. N. Morris** narrates five cases of death in a family of ten children from jaundice; the parents were perfectly healthy. The infants

affected were apparently normal at birth. The jaundice set in within twenty-four hours; the stools were normal, the urine never dark. The onset was marked by gastro-intestinal symptoms, vomiting, loss of appetite, etc. The author finds on looking up the literature that the first-born usually escapes, as in his cases, and that the toxic agent becomes most intense as the parents grow older. Treatment so far has been useless.

F. R. B. Atkinson.

Meningeal hæmorrhage in the newly born (*'Thèses de Paris,'* 1911–12, *No.* 71).—**C. J. Montet** records seven cases in which lumbar puncture was used as a diagnostic, prognostic and therapeutic measure. Four recovered and three died. He recommends that 5 c.c. of cerebro-spinal fluid should be withdrawn every two days until the fluid is quite clear.

J. D. Rolleston.

Recovery from tetanus neonatorum (*'Rev. Soc. Méd. Arg.,'* 1911, xix, *p.* 349).—**F. Schweizer.**—A male child, born by easy labour but brought into the world by an ignorant neighbour, on the eighth day of life showed difficulty in suckling, followed shortly afterwards by general contractures, opisthotonos and convulsions. In the course of sixteen days five subcutaneous injections of antitoxic serum were given—100 c.c. in all—accompanied by sodium bromide internally and warm baths. Recovery took place. The case was of a subacute type, as the first injection was not given till the fourth day of disease. J. D. Rolleston.

Epilepsy in a child five days old (*'Gaz. des Hop.,'* 1911, lxxxiv, *p.* 1339).—**L. Marchand** describes the case of a woman, an imbecile and epileptic, who was delivered of a female child. At birth it appeared normal, but five days afterwards it was seized with a typical epileptic fit: these occurred frequently until the eighth day when death took place. Examination showed diffuse meningo-encephalitis, in the presence of which the author considers that heredity was not sufficient to explain the cause of the disease in the child, and that the meningo-encephalitis was probably the result of toxic products or some infectious agent. F. R. B. Atkinson.

Congenital neoplasm of the spinal theca (*'La Pediatria,'* 1911, xix, *p.* 276).—**G. Berghinz** describes this case of lymphosarcoma. A boy, aged 10 days, born of healthy parents, with no history of syphilis, was noticed not to move his legs three days after birth. He weighed 3000 grm.; the face and upper limbs were normal, the lower limbs paralysed, toneless, flaccid, deep reflexes absent, cutaneous present. Sensation appeared to begin about three fingers' breadth below umbilicus. Electrical reaction absent. Anus paralysed, incontinence of urine. Death took place on the twenty-fourth day. Between the eleventh dorsal vertebra and the promontory of the sacrum was a large tumour 4 cm. by 2 cm., soft, adherent to the dura mater, and situated between this and the bone, crushing the spinal cord. It had a gelatinous appearance, and was easily separated from the dura mater while remaining adherent to the vertebral column.

Vincent Dickinson.

Sexual precocity (*'Canada Lancet,'* 1911, xlv, *p.* 171).—**H. T. Machell** records two cases. The first was a girl who started to menstruate at the age of six years and two months. The breasts resembled those of a girl of twelve or fourteen years. The pubes had considerable hair. The vagina

admitted the little finger easily. The uterus was of fair size. The ovaries were not palpable. The second case was a boy who had pubic hair at five months, erections a year later, and emissions at two and a half years. At four years he was independent in manner and self-possessed and his voice was loud and raucous.

J. D. Rolleston.

Precocious maternity; double spina bifida in child (*'Bull. Soc. d'Obst. de Paris,'* 1911, xiv, *p.* 327). —**A. Bonnet-Laborderie.**—A girl, aged 14 years and 1 month, gave birth to a full-time child presenting double spina bifida, one in the cervico-dorsal and the other in the dorso-lumbar region. Death took place from inanition on the fourth day of life. The mother, whose labour had been normal, made an uninterrupted recovery.

J. D. Rolleston.

Three cases of spina bifida (*'Wien. klin. Rundschau,'* 1911, xxv, *p.* 613).—**Josef Simon** describes three cases, two of which were myelo-meningoceles. (1) A male child, with a lumbo-sacral tumour; the child had also double club foot. He died on the tenth day. Besides the deformities cerebro-spinal meningitis was found post mortem. (2) Female child with a tumour the size of an apple in the lumbo-sacral region. The child was well nourished, and was operated upon when three months old. All went well for some days, but after signs of paralysis in both legs the child died—nine days after operation. (3) Female child, with a swelling of the lower part of sacrum, operated upon when eight days old. The child, like the last, withstood the operation, but died eleven days afterwards. Despite these unfavourable results in the two cases, operation should be advised on all well-nourished children. Operation does save some children from an almost certain painful death a few months later.

M. D. Eder.

Hereditary cleido-cranial dysostosis (*'Paris méd.,'* 1910–11, ii, *p.* 556–59).—**Mouchet** records three examples, in a mother and her daughter and son, and gives a general account of the disease. Historically he states that absence—total or partial—of the clavicles had been noted as a rare abnormality by many anatomists in the past, but that the association with the cranial defect was first pointed out by P. Marie; he has therefore overlooked Sir T. Barlow's description of this association as far back as 1883 (*'Brit. Med. Journ.,'* 1883, i, *p.* 909). To the three recognised features of the condition, namely, partial or complete aplasia of the clavicles, the cranial malformation, and the hereditary character, he adds anomalies of the teeth which are almost constant. The first dentition is delayed and often persists to the twelfth year; some teeth, especially the upper incisors, are absent. Caries appears early and progresses rapidly, and the teeth are small, irregular, and badly embedded. The vault of the palate is nearly always high, and is sometimes cleft in the median line. Incomplete forms may occur. Although the deformity is seldom seen in more than two generations, it is usually more fully developed in the second than in the first generation.

H. D. Rolleston.

Osteogenesis imperfecta (*'Nederland. Tijd. v. Geneesk.,'* 1911, ii, p. 794). —**J. S. van Henkelom** and **D. J. Kamberg** record a case in a newborn male infant, whose parents were healthy and had five other healthy children. The limbs were short in relation to the trunk, and showed deep symmetrical folds in the skin, on the upper arms, 2 cm. below the shoulder-joint, on the

forearms 2 cm. above the wrists, and in the lower limbs 2 cm. below the groins and above the ankles. There was slight œdema of the feet; crepitus was felt in both humeri radii and femora. The child weighed 5 lb., and was $1\frac{1}{2}$ ft. long. The skull was flattened posteriorly, and the cranium felt very soft. Death took place suddenly two days after admission to hospital. A partial necropsy was made. The subcutaneous tissue and muscles at the site of the skin-folds were infiltrated with blood. The diaphyses were short and slender compared with the epiphyses, especially in the case of the humerus, and were three quarters of the normal length. There was an intra-capsular fracture of the humerus, and fractures of the ulna and radius above their distal epiphyses. The diaphysis of the femur was broken in its upper part. The two chief phenomena of osteogenesis imperfecta, so named by Vrolik in 1849, are the slight degree of ossification of the cranium and extreme brittleness of the bones, both those formed in cartilage and in membrane. No changes were found in the internal organs. The prognosis is unfavourable. Most of the children were born dead or died in the first weeks of life, but von Recklinghausen's case was nearly two years old when it died, and cases described by Hochsinger and by Fowler were still alive at three years.

J. D. Rolleston.

Facial hemiatrophy (*'Berlin. klin. Woch.,'* 1911, xlviii, *p.* 550).—**Stier** showed a case of hemiatrophy of the right half of the face in a left-handed girl, aged 11 years. The affection is twice as frequent on the left as on the right side of the face. When it is associated with hypertrophy of other parts as unilateral mammary hypertrophy it is more frequent in right-handed people on the right side, and in left-handed people on the left, but if associated with disturbances dependent on arrested development, it is most frequent on the left side in right-handed people and *vice versâ*.

F. R. B. Atkinson.

Facial hemiatrophy (*'Journ. Nerv. and Ment. Dis.,'* 1911, xxxviii, *p.* 152).—**G. A. Moleen,** who thinks that this disease occurs not infrequently in children, records a case in a boy, aged 10 years, who had had infantile paralysis at two years. When four years old he fell and struck the left side of his face. The wound took two months to heal, and six months later the left side of the face was noticed to be less prominent than the right. The frequency of a history of trauma in facial hemiatrophy suggests that injury to the bones of the face about the spheno-maxillary fissure may involve Meckel's and the otic ganglion or other connections of the sympathetic with the trigeminal.

J. D. Rolleston.

Arrested mental development with congenital absence of both thumbs (*'New York Med. Journ.,'* 1911, i, *p.* 494).—**A. Gordon** records the case of a girl, who at 16 years old was mentally a child. She could not solve the simplest sums, but was deceitful and displayed abnormal moral and sexual tendencies. She heard badly, although her auditory apparatus was normal, and had scotomata, without defect in visual organs. She stuttered, and had a high arched palate, poor dentition, very small ears, which were cup-like, and a very small head. She had five fingers on each hand, but no thumbs; the third toe on each foot was one third the size of the others. The father was an alcoholic and perhaps syphilitic, since the mother had had several miscarriages. Four other children showed arrested mental development.

Frederick Langmead.

Polyarthritis deformans in a girl, aged 14 years (*'L'Echo méd. du Nord,'* 1911, xv, *p.* 597).—**Deléarde** and **Fontan** speak of the difficulty of elucidating the ætiology of this condition, and quote the case of a girl, aged 14 years, who since the age of six had been confined to bed. All the joints were deformed, immobile and painful. She had, at the age of three, suffered from rubella, followed by an empyema which was opened and drained and well healed. When six years old she began with pain in the left hip followed by pain in the fingers and then other joints. After nine months had passed all her joints had become immobile. The muscles wasted, but the general health remained good. The cause of the condition was discussed, and the radiographs showed it to be "tubercular rheumatism," in spite of the skin reaction being negative to tuberculin. [This condition, which appears to be what in this country is called "rheumatoid arthritis," Deléarde considers to be due to tubercular toxins.—J. P. P.] J. Porter Parkinson.

Acute rheumatism among children: an inquiry into the prevalence of acute rheumatism and its consequences among children of school age (*'Lancet,'* 1911, II, *p.* 1133).—**F. Langmead** records the results of a systematic examination of 2556 children attending the London County Council Elementary Schools. Each child was stripped to the waist and the heart was examined by the ordinary clinical methods. Where any suspicion of previous rheumatic infection arose, the parent was questioned as to previous ill-health, and previous or existing rheumatism in other members of the family. Children were only considered rheumatic if they showed definite evidence of rheumatism or its effects, or if the condition found suggested rheumatism, and further inquiry from the parent afforded strong enough collateral evidence to remove all reasonable doubt. Approximately equal numbers of boys and girls were examined. Fifty-nine boys and 74 girls could be classed as definitely rheumatic, giving a percentage incidence of 5·20 for children of all ages attending school, or 6·83 for children in the senior departments, *i. e.* from six and a half to fourteen years of age. The proportion of rheumatic children gradually increased as they grew older, being ·60 per cent. at four years of age, and 8·94 per cent. at thirteen. In most cases the condition of the heart was that which first attracted attention. Out of 133 children classed as rheumatic, 115 showed some sign of cardiac disorder. Rheumatic heart affection occurred in 4·49 per cent. of the children of all ages attending school, or in 5·94 per cent. of those in the senior departments. Obvious valvular disease was found in 2·93 per cent. of children at all ages, or 3·92 per cent. of those in the senior departments. Chorea occurred in 18 cases only, or ·70 per cent., of whom twice as many were girls as boys. The incidence of other rheumatic affections was—polysynovitis 1·64 per cent., growing pains 1·37 per cent., and tonsillitis 1·25 per cent. It is pointed out, however, that the percentage of fleeting and consequently easily forgotten forms of rheumatism is probably far below the average, whilst no data of value could be obtained of such rheumatic manifestations as anæmia, which when occurring alone could not be classed as rheumatic. The frequency of tonsils and adenoids in rheumatic children is interesting. An overgrowth of the tonsils or pharyngeal mucosa occurred in 58 cases, or in 43·6 per cent. of the rheumatic children, and this was sufficient to warrant operative interference, in 37, or 27·8 per cent., of the rheumatic cases. The usual percentage of school-children requiring operation for tonsils and adenoids is 7 or 8.

Author's Abstract.

Some notes on the manifestation of rheumatism in children (*'Austral. Med. Journ.,'* 1911, xvi, *p.* 163).—**F. Hobill Cole** believes in a status rheumaticus, which includes muscle pains or "growing pains," some forms of tonsillitis, pleuritis, endocarditis, pericarditis, chorea, and erythema multiforme. The prognosis is always grave even in the mildest cases; when once the rheumatic heart is evident, it either ends fatally or else the lesion is nearly always permanent. F. R. B. Atkinson.

Facial phenomenon and convulsions (*'Jahrb. f. Kinderheilk.,'* 1911, lxxiii, *p.* 727).—**W. Stoeltzner** found in a boy, aged 1½ years, Chvostek's sign well marked. On tapping the cheek a severe attack, beginning with closure of the glottis and ending in convulsions, occurred. After cessation of the latter there was hardly a trace of the facial phenomenon. He concludes from this that Chvostek's sign can be suppressed transitorily by an attack of convulsions. F. R. B. Atkinson.

Tetany and the spasmophile tendency in infancy and childhood (*'Med. Record,'* 1911, ii, *p.* 559).—**H. Koplik** would divide all children into two classes: (1) Those who have never had convulsions, spasms or spasmodic affections, and who are not likely to have them under the most trying circumstances. (2) A large class of infants and children who, though they may never have had convulsions or spasmodic affections, may at any moment exhibit them if the inciting agent becomes apparent. Such are the tetanoid infants of Escherich or the spasmophiles of Heubner and his school. Von Pirquet found that fully 56 per cent. of all children came under this class. Often such infants are born of neurotic parents; they are nervous, excitable and pasty. Rickets, cranio-tabes, and in older children "a lymphatic tendency," are often present. The majority are artificially fed. The least variation in food or daily routine produces disturbance. They are likely to suddenly become veritable tetanoid infants. Laryngo-spasm, with a variety of apnœa, is usually the first symptom, which at any time may be complicated by convulsions or sudden death due to spasm of the diaphragm and stopping of cardiac action (*Herztod*). The convulsions are peculiar in that they start suddenly with suspension of respiration and slowing of the heart. Breathing is resumed in a shallow manner, and not by deep inspiration as is usual in other cases. The next stage is marked by the appearance of muscular spasm, the so-called carpo-pedal spasm or tetany. In an attack of tetany the sensorium may be affected; the face has an anxious look, which may be replaced by that of vacant idiocy; the eyes may have a fixed, vacant stare. The author records eighty-two cases of children, of whom twenty-six suffered from "frank" tetany, and the remainder were "spasmophiles or tetanoid." Seven of the spasmophilia infants showed at the same time congenital laryngeal stridor, a condition considered by some to orginate in neurosis. Pyloric spasm and stenosis is another accompaniment. It occurred also in the subjects of Little's disease, some forms of idiocy, as Mongolian and amaurotic idiocy, and in hydrocephaly, in neurasthenic and hysterical children, and in spasmus nutans. Of twenty-five definite tetany cases, fifteen were bottle-fed. It occurred chiefly from the sixth to the twelfth month, during which period sixteen cases were noted; below the sixth month there were seven cases, and above the twelfth, two cases. Three were suddenly fatal. He lays stress on the value of the electrical reactions in the diagnosis of the condition. In these serious cases with mental apathy and pseudo-blindness the diagnosis from meningitis is especially difficult. The separation of these cases from examples of true

epilepsy is important, for they account for some of the cases of convulsions where no fits occur in later life. Spasmophilia and true epilepsy is only an accidental combination. He favours the view held by Escherich and his school that the condition is analogous to operative tetany, and is due to ablation or inefficiency of the parathyroid glands.

FREDERICK LANGMEAD.

Examination of the stomach in tetany in children (*'Monatsschr. f. Kinderheilk.,'* 1911, x, *p.* 429). —**O. Thorspecken** describes six cases of tetany, four in sucklings, two of which ended fatally, one in a child of two, and one fatal case in a girl of seven years of age. In none of these cases was there any sign of acute dilatation of the stomach clinically or by the Röntgen rays. The author does not believe there is any connection between atony of the stomach and tetany.

F. R. B. ATKINSON.

Spasmophilia diathesis (*'Med. Times,'* 1911, XXXIX, *p.* 138).—**Blaunce** states that spasmophilia is by no means a rare disease. It is very frequently latent, and the symptoms may only be evident under some special excitant, such as an infectious fever. The condition almost invariably occurs in artificially fed infants from three months to three years of age, who may appear to be physically healthy or show evidence of rickets or marasmus. The usual signs are convulsions, stridulous breathing, and a partial or general tetany, Chvostek's sign, contracture of the orbicularis palpebrarum on tapping the facial nerve, and Trousseau's sign, the production of tetany on constricting the arm above the cubital fossa, are also present, and the diagnosis can be clenched by the presence of galvanic irritability as shown by the K. O. C. Artificial feeding seems to be the main ætiological factor, for the rarity with which the condition occurs in breast-fed children would seem to indicate that there must be something in or about cow's milk responsible for this symptom-complex. Hereditary nervous predisposition also seems to play a part. The condition is readily amenable to treatment, and the child must be put on a milk-free diet until all the symptoms have disappeared. The administration of cod-liver oil and phosphorus is a useful addition.

T. R. WHIPHAM.

Cerebral tumour, infantile epilepsy with mental troubles (*'Paris méd.,'* 1911–12, I, *p.* 18).—**P. Haushalter** and **P. Hoche.**—A child from birth was subject to convulsions repeated at intervals, and assuming at the age of four the appearance of epilepsy. Then occurred mental excitement; the child could not keep quiet, but was perpetually walking up and down stairs, and seizing everything within its reach. It was ultimately placed in an asylum, and at the age of eleven the first signs of cerebral tumour appeared. These symptoms progressed, and the convulsions disappeared. Death occurred in a year. On autopsy a tumour (glioma) was found in the left hemisphere, and a large cystic cavity in its neighbourhood. The authors consider the tumour was congenital and gave rise to the various symptoms described.

F. R. B. ATKINSON.

Psychasthenia in a child, aged 2 years, due to coffee-drinking (*'Arch. of Pediat.,'* 1910, XXVII, *p.* 778). —**T. A. Williams** describes the case of a child, who, since the age of three months, was given coffee of the same strength as taken by her mother, and who, at two years, was drinking

three large cups daily. She was poorly nourished and rachitic when seen at this age. The nervous signs first appeared at the age of six months, when she developed the symptom of pica. She had for the last two months acquired the habit of scratching one wrist for the great part of the day, producing a large and persistent sore. For some months she had screamed continuously all day long, although not in physical or mental pain so far as could be ascertained. The author compares the scratching of the wrist to a tic, and the screaming to such a psychical tic as coprolalia.

REGINALD MILLER.

Resistance to fatigue in children (*'Arch. de méd. des enf.,'* 1911, XIV, *p.* 435).—**Lesage** and **Collin** found that children under two and a half, or exceptionally three years, presented an extraordinary resistance to fatigue, shown by their being able to hold up their arms for a long time without being tired. Thus in twenty-seven normal children aged from two to two and a half years the arms could be held in the same position from thirty to forty-five minutes. This absence of fatigue is due to an incomplete development of the nervous system, and is associated with other phenomena due to the same cause, such as Babinski's sign and retardation of sensibility to painful impressions.

J. D. ROLLESTON.

School Hygiene.

The Sheffield open-air school (*'Brit. Journ. Tuberculosis,'* 1911, v, *p.* 204).—**Ralph P. Williams** gives an account of the progress of the open-air school campaign in Sheffield. The school was ordinarily visited twice weekly by one of the school nurses, although a considerable number of extra visits were paid when detailed medical examinations were in progress, especially during the opening and closing weeks. The cleansing scheme was thoroughly carried out, and home visits paid, advice being given to the parents when necessary. On admission the children's teeth are examined by a dental surgeon, and in most cases suitable treatment is applied. All meals were served in an open-air shed. With regard to personal hygiene, each child was provided with the following articles, which were numbered: washable bag, containing brush and comb, tooth-brush, hand-towel, bath towel, other numbered articles being a deck chair and foot-rest, blanket, and rain cape. The cleansing of the teeth was carried out daily. Special attention was given this year to physical exercises, and the good results which have been obtained in regard to increased chest capacity are no doubt largely due to the thorough way in which these exercises were taught. A satisfactory increase in weight occurred. An increase of chest measurements was noted in all the children, this beneficial increase in breathing power being largely due to physical exercises and increased nutrition. In conclusion it may be pointed out that the open-air school has an important educational influence on the parents; the necessity of sufficient rest, combined with regular, plain, feeding and an open-air life, being impressed upon them by the success of these methods in the treatment of delicate children.

J. ALLAN.

Darlington open-air school (*'Brit. Journ. of Tuberculosis,'* 1911, v, *p.* 211).—**F. T. H. Wood** writes of the work at the above school. The commonest conditions qualifying for admission were malnutrition, anæmia,

enlargement of glands in neck, and recent operations for tonsils and adenoids. Only one meal daily—a dinner of two courses—was given. With regard to the day's work, the time-table avoided the formal lessons usually given, and included practical lessons in arithmetic and mensuration geography, nature study, and gardening, while a break of fifteen minutes for play or rest was given morning and afternoon. Particular care was given to the ingraining of habits of cleanliness. Each child brought a towel, hair-brush and comb and tooth-brush. Special attention was given to breathing exercises and these were given daily. A special feature was the daily shower-bath, which produced excellent results in increased bodily cleanliness, neatness of hair, and general briskness and tone. The results indicated by increase in weight, improvement in general physique and increase of hæmoglobin percentage were good. A gratifying feature was that children examined three months after the school had been closed showed that the improvement had been well maintained. J. Allan.

Open-air school work in Chicago (*'Brit. Journ. Tuberculosis,'* 1911, v, *p.* 188).—**Sherman C. Kingsley** describes the initiation and progress of the open-air school at Chicago. The work and routine are much the same as in similar institutions in this country. The following were the principal diagnostic points used in selecting applicants: (1) Family history (63 per cent. of the children came from families in which some member had died from, or was in an advanced state of, tuberculosis); (2) general type of body and state of nutrition; (3) presence or not of fever; (4) existence of cough; (5) dulness or changes in breath-sounds (*râles* were usually found to indicate open tuberculosis); (6) reaction to Von Pirquet's test; (7) absence of tubercle bacilli in sputum or swab from throat. No open tuberculosis case was admitted. A daily shower-bath was given. School lessons were strictly limited and abundant rest was insisted on. Yet most satisfactory progress from an educational standpoint was made, and the improvement in the general health of the children was in every way excellent.

J. Allan.

Open-air schools (*'Paris méd.,'* 1911 12, i, *p.* 32). **D. Méry** gives a short description of day and boarding schools in the open air for children suffering from various diseases, especially tuberculosis.

F. R. B. Atkinson.

The tuberculous school child: with special reference to open-air schools (*'Brit. Journ. Tuberculosis,'* 1911, v, *p.* 195).—**D. M. Taylor** chronicles the experience of the workers at Halifax. He does not believe that pulmonary tuberculosis is very common among school-children, but he strongly urges the importance of the "pre-tuberculous" stage. To wait for definite signs is fatal, and one must often take energetic action on presumptive evidence. An error of diagnosis is here a blessing, and its only result will be to have restored a weakly child to a state of vigour. At Halifax it was found that (1) 1 per cent. of elementary school-children (including absentees) show definite physical signs of pulmonary tuberculosis; (2) 3 per cent. are definitely predisposed—the pre-tuberculous. Diagnosis and symptoms, differential diagnosis, ætiology, prophylaxis and treatment are then briefly discussed. A most important source of infection in children is from direct association with persons suffering from pulmonary tuberculosis. The principles of the open-air school are (1) Abundant

fresh air—large mansion with extensive grounds for open-air classes; (2) plentiful supply of good food—three good meals a day; (3) one spray bath weekly; (4) practical methods of instruction—most lessons evolving naturally from daily routine; (5) individual care by small classes; (6) comradeship. The general physical results were good, as are indicated by the following numbers: Average increase of height, 1·1 in.; average increase of weight 3 lb. 3 oz.; average increase of hæmoglobin 10 per cent. The disadvantage (which indicates the limitation of the open-air school work at the present time) is that the children have to return at night to their homes with the infected and insanitary environment, and at the close of the session children insufficiently cured are returned to the ordinary school. J. Allan.

The prevention of deafness in school-children (*'Journ. de méd. de Paris,'* 1911, xxxi, *p.* 754).—**Jacques** writes a paper which is a sign of the times, and with which we are strongly in agreement. He advocates the examination, physical and functional, of the organs of hearing and of the upper air-passages in every child on entering school. By doing so, not only can ear diseases present be adequately, and in more than half the cases, successfully treated, but those potential can be prevented. Moreover in cases where deafness has already reached a stage when little can be done for it, proper pedagogic treatment can be indicated. Jacques insists upon the importance to the child's career and social future that prophylaxis of deafness should not only be indicated, but carried out, and in the presence of the ignorance and indifference of individuals, he says—"l'Etat, tuteur naturel et protecteur des déshérités, doit prendre l'initiative de ces mesures que seul il a le pouvoir d'imposer." Macleod Yearsley.

The problem of the verminous scholar (*'Journ. Roy. Instit. Public Health,'* 1911, xix, *p.* 407).—**M. Macdonald** remarks that the problem of the verminous scholar is theoretically easy to deal with, but in practice its solution is most difficult. Medical inspection is, however, assisting in diminishing the numbers of such children. He suggests that measures should be (1) preventive, and (2) curative. Amongst the former he would place first cropping of the hair both in boys and girls. If girls must wear their hair long, then the hair should be tied in a "pig-tail" behind, and not allowed to hang loose, and parents should be advised to see that the hair is combed each night, and the head washed once a week with soft soap. Teachers and parents ought to be encouraged to allow children to attend school bare-headed, or if they wear hats coming to, or going from school, the teachers ought to try to get them to go without hats during the play hours at school. Each child should have its own peg in the cloak-room. There should be frequent inspections, by the school nurse, and following these inspections short lessons on the importance of keeping the head clean, especially to the older girls, might be given by the teacher or school nurse. Probably the hygienic education of the children, who may reasonably be expected to practise in after life some of the hygienic truths taught them in school, is the best solution of the problem. School baths provided more especially for promoting the general cleanliness of the scholars should prove an important adjunct in preventing verminous conditions. With regard to curative measures the author places foremost isolation—in slight cases by making the child sit apart from its companions, in bad cases by excluding the child from school until the condition has been remedied.

As soon as possible the parent should be notified. This is best done by a visit from the school nurse. If parents fail to take steps to treat the condition then they should be threatened with legal proceedings, and if necessary they should be prosecuted. There are two ways of treating the children affected. They may either be treated at home or at a central cleansing station. The latter only is likely to be effective with the children of the poorer classes. For obvious reasons the homes ought to be disinfected at the same time. J. Allan.

The teaching of eugenics in schools and colleges (*'Journ. Roy. Instit. of Public Health,'* 1911, xix, *p.* 385)—**R. Murray Leslie** argues strongly in favour of eugenic teaching for boys and girls, who would then be much less likely to grow up with false or perverted ideas of sex matters. He briefly discusses the four following questions: (1) Should there be preliminary teaching at home? (2) When (at what age) should sex and eugenic teaching be given in schools? (3) What form should such instruction take? (4) How should such instruction be given? He gives the following general principles for guidance in regard to the teaching of eugenics: (1) All teaching must be authoritative and given by qualified instructors of the same sex. Vague amateurish teaching is not only useless, but may be positively dangerous. (2) Teaching should be given on a basis of perfect frankness. (3) The subject should be treated as both a serious and sacred matter. (4) Nature study of plant and animal life is the best introduction to the subject, followed by studies in physiology and personal hygiene. (5) The teaching is best given in small classes, supplemented by incidental and confidential talks with individual pupils as occasion arises. Confidence between teacher and pupil is to be encouraged in every way possible. (6) The teaching should as far as possible have due regard to the age, temperament, and home environment of the pupil. (7) The personality of the teacher is every whit as important as his or her technical knowledge of the subject. (8) There should be encouragement of intellectual, emotional and social interests outside school work. This may be partly achieved by fostering a taste for the best in literature, art, music or science. (9) In Great Britain there is a widespread conviction among both men and women teachers of the paramount influence of religion, and of scripture lessons, which have the power to inspire a high moral ideal and to touch the spring of conduct. (10) Co-education in this country, though still on its trial, is regarded by not a few as the solution of the problem, and the best means of developing all that is most valuable from the eugenic standpoint. J. Allan.

The need of some correlation between infant mortality work, school medical inspection, and the teaching of hygiene in schools (*'Journ. of the Royal Instit. of Public Health,'* 1911, xix, *p.* 399).—**Prudence E. Gaffikin** in an interesting paper deals with the above. She argues that it is a pitiable waste of time and makes school work practically useless if we only begin our care of the children at school age; and she asserts that half to two thirds of the imperfections found in school-children are directly or indirectly caused or aggravated by want of care, or want of knowledge, on the part of the parents during pregnancy, infancy and early childhood. Hyperlactation has a marked degenerating effect not only on the individual child but also on future children. It might even be said artificial feeding is better than hyperlactation; the former would only

injure the child fed. Several illustrative cases are given in support of the above statements. Again, the effect of this exhausting maternal strain on the nervous system of the younger children is quite appreciable. She found the proportion of cases of night terrors was exactly the same in the older or younger members of a family, but the graver nerve troubles—mental deficiency, fits, *petit mal*, the rheumatism that is a developmental neurosis, and chorea—occurred markedly more frequently in the children belonging to the younger half of the family, unless in cases of such pronounced bad heredity that nervous derangement was a foregone conclusion. With regard to children of school age and more especially those who are about to leave school there is need for teaching hygiene—personal and social—and for well-considered eugenic teaching. These subjects should be included in the curriculum of continuation classes. But it is not much use having taught a girl the care of her body and the care of her baby if she is reduced in the early years of married life to suckling her child the longest possible time in sheer self-defence, her physique, her nerve force, not being equal to the strain of continual pregnancies and the care of small children, probably with inadequate food, and in insufficient cubic space. The boy must equally be taught, and must grasp, that such conditions are bad for the State, for the children, for the mother, and indirectly for himself. J. Allan.

Reviews.

Précis de Médecine Infantile. By Dr. P. Nobécourt. Second Edition. Paris: Masson et C^ie^, 1912. Price 14 fr.

In the nine hundred pages of text which this book contains there is amassed a vast amount of information, some of which, considering the scope of the work, might perhaps with advantage have been omitted. The title is a 'Précis de médecine infantile,' but in reality the book is rather a treatise on medicine, dealing with the occurrence of disease in childhood; in other words, it treats the subject more from the point of view of the general physician than from that of the pædiatrist. The author, instead of describing the essential maladies of children, seems to have taken infinite pains to discover how many varieties of disease can occur in childhood. The two things are not quite synonymous, and it is for this reason that we say that the book might well have been curtailed. Detailed descriptions of diseases which are by no means confined to children, and do not differ essentially when they occur at different ages, might well have been omitted, as they are to be found in the general text-books on medicine, or, at all events, a brief description of them would have sufficed. Nevertheless the book is a valuable addition to the literature of the subject on account both of its accuracy and of its detail. It is thoroughly up-to-date, and will prove a useful work of reference, though the absence of a detailed index seriously militates against its general utility. A table of contents in a large book like this does not take the place of an index, and consequently reference to any point is apt to involve both time and trouble.

The arrangements of subjects is strictly according to systems. Thus we find mumps under "Salivary Glands," and diphtheria, pneumonia and

whooping-cough among the disorders of the respiratory system. On the other hand, chronic articular rheumatism and diabetes mellitus seem rather out of place under "Disorders of Nutrition." The standard of the various sections is very uniform; thus it is difficult to accord special praise to any particular one. Some of the chapters, however, owing to the multiplicity of the clinical forms and varieties of the diseases described, are somewhat bewildering in their complexity.

To turn to more detailed criticism in a work which abounds in such a wealth of detail as this, we should have expected to find a more adequate account than that given of lymphadenoma, which receives scarcely more than a passing reference under the heading "Aleukæmic lymphadenitis," and some description of what is essentially a disorder of childhood—habit-spasm—of which we could discover no mention. Objection must also be taken to secondary infectious arthritis being included under the name "Rheumatism." Where an author is so precise as Dr. Nobécourt it is surely advisable to restrict the term "rheumatism" to its actual manifestations, and not to make it generic for all forms of arthritis. In vain, too, we looked for some account of Still's disease (the so-called osteo-arthritis of children), and further, found no mention under amaurotic family idiocy of the cherry-red spot in the region of the macula lutea which is so characteristic of the condition.

Infantile paralysis and the epidemic form of the disease are dealt with as two separate entities, though the author is evidently in doubt as to the advisability of so doing. The analogy, which he quotes, that there are forms of cerebro-spinal meningitis which are due to various organisms, and an epidemic form caused by the meningococcus, does not lend much weight to such a proceeding. In the same chapter acute encephalitis receives but a bare mention, though it deserves some description.

It is interesting to note that the author favours medical treatment in cases of hypertrophic stenosis of the pylorus. He says: "If these fail, and only then, should recourse be made to surgical interference."

At the end of the book there is a "Mémento thérapeutique" of the various drugs and remedies mentioned in the text, and two coloured plates, one representing the changes in the long bones which occur in rickets, congenital myxœdema and inherited syphilis, and the other the rashes of scarlet fever, measles and chickenpox, the first being perhaps the more satisfactory of the two. Besides charts and diagrams there are several illustrations throughout the text, serving to depict the conditions described. These, for the most part, are good but many of them seem to have been taken from other sources.

T. R. W.

De l'incontinence d'urine chez les enfants et en particulier de l'incontinence nocturne dite essentielle. Par le Dr. Denis Courtade. Paris: Masson et C^ie^, Editeurs. Pp. 38. Price 1 fr. 25 c.

This brochure contains a detailed account of incontinence of urine in childhood. The author recognises four forms of the disorder, according as it is due (1) to disease of the nervous system, (2) to malformation, (3) to affections of the genito-urinary tract, or is (4) essential or idiopathic in nature. It is to a consideration of the last of these that he chiefly devotes himself, and he describes two varieties: (*a*) The atonic, which results from a lack of tone in the external sphincter, combined, probably, with some defect in the nervous reflex mechanism; (*b*) the irritable, in which there is an

exaggerated sensitiveness of the bladder. These two varieties may exist in combination, and the author describes in detail the symptoms and diagnostic features of each and enters fully into their treatment. He considers that belladonna is only of use in the irritable variety, while strychnine is indicated where there is want of tone. He regards treatment by electricity as the most rational means when the sphincter is defective, and gives a detailed description of the technique of its application, although the methods described are hardly applicable in general practice. He claims to have affected a complete cure in 55 per cent. of his cases by this means. As a rule from ten to fifteen applications are necessary. R. H.

The Diseases of Infancy and Childhood. By L. Emmett Holt, M.D., Sc.D., LL.D., assisted by John Howland, A.B., M.D. Sixth edition. New York and London: D. Appleton & Co., 1911. Price 25*s*. net.

This standard text-book, which first appeared in 1897, and has now reached its sixth edition, is too well known to require detailed notice. It suffices to draw attention to the changes in the new edition. Many articles have been entirely re-written, and several new ones appear for the first time. The greater part of the new material will be found in the chapters on nutrition and infant feeding, infant mortality, intestinal intoxication, pyloric stenosis, appendicitis, acute peritonitis, endocarditis and pericarditis, cerebro-spinal and other forms of acute meningitis, acute poliomyelitis, hereditary syphilis and tuberculosis. Many of the old illustrations have been omitted, and twenty-six new ones have been added, including twelve skiagrams. The value of the book as a work of reference is enhanced by the possession of an excellent index. J. D. R.

La Scarlatine. By Dr. A. Lesage, Médecin de l'Hôpital Hérold. Paris: Masson et C^ie^, 1911. Price, paper 2 fr. 50 c.; bound 3 francs. Pp. 158.

Recent work on scarlet fever has been admirably summarised in this compact little volume. After an historical introduction, in which he shows how the modern idea of scarlet fever as a bucco-pharyngeal affection in which the eruption and desquamation are accessory has gradually become evolved, the author discusses the clinical aspects of the disease. Pure or uncomplicated scarlet fever is distinguished from scarlet fever with complications. In dealing with the former Dr. Lesage describes in detail the characters of the tongue and throat, digestive disturbances, toxic eruptions and desquamation. In the section on complicated scarlet fever he dwells on the early complications which involve the nose, throat, and suprarenals, and the numerous late complications of the second and third week, special attention being given to albuminuria. By individual isolation such as is practised at the Hôpital Hérold during the first three weeks of the disease the author thinks that complications can be prevented. In the chapter on treatment, red light treatment is advocated as having a favourable effect on the eruption and the bucco-pharyngeal symptoms and systematic syringing of the throat is deprecated. Since he has abandoned this practice Dr. Lesage has very rarely met with otitis. J. D. R.